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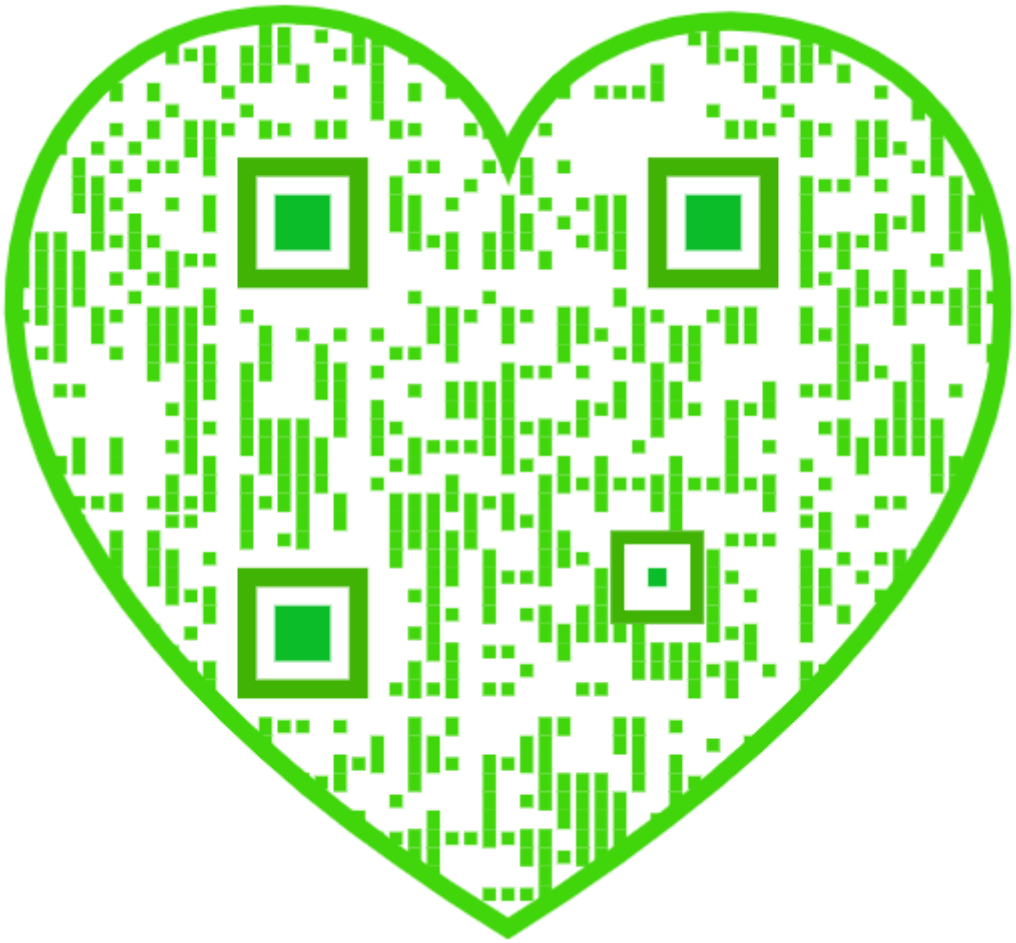

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Devoted exclusively to Advanced Bee Culture.

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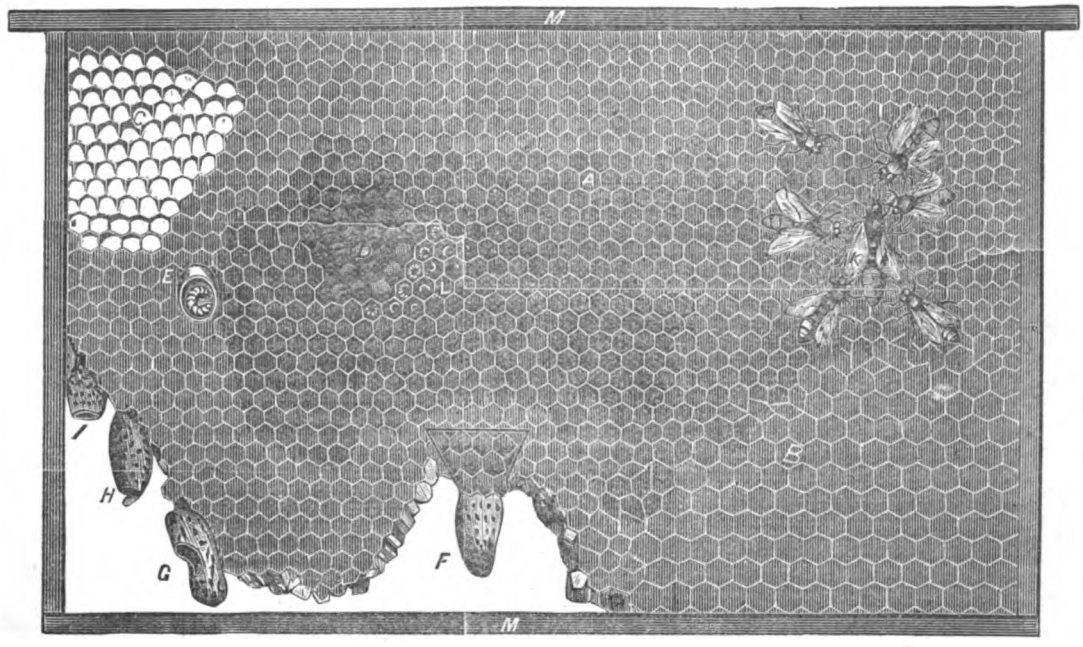

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Devoted exclusively to Advanced Bee Culture.

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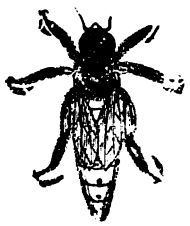

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INTRODUCTION.

SCIENTIFIC bee culture, so successfully introduced into New Zealand about four years ago, has now reached that stage when the need of a representative journal is beginning to be seriously felt. We have for some time been fully aware of this want, by the large amount of correspondence received from various parts of the Australasian colonies relative to matters connected with the details of management. Difficulties are sure to arise with beginners in a new industry, when it is of the utmost importance that they should receive the most practical advice available; this can best be obtained through a journal devoted to the interests of the particular industry. It is also of vital importance that the followers of any pursuit should have a knowledge of what is being done in their particular branch in all parts of the world; the latest and most approved methods and appliances, and also the best market for their produce.

In introducing the NEW ZEALAND AND AUSTRALIAN BEE JOURNAL as a candidate for public favour, we are aware of the difficulties attending the bringing out of a new publication; but, having given the matter much thought, and being determined to do our best in the interest of our favourite pursuit, we have not the least doubt of making it well worthy the support of the bee-keeping public, without which we cannot hope to prosper. We have always had great faith in New Zealand as a honey-producing country, and have taken every opportunity of impressing the same upon our country settlers; whilst recent reports go to show that we have even underrated her capabilities in this respect. The increased knowledge of the habits and management of bees, together with the improved apistical appliances brought into use within the last few years, have been the means of placing honey producing in a leading position amongst rural pursuits. Bee culture in the United States has now assumed proportions of enormous magnitude, many scores of thousands of people find employment in connection with this industry; and the quantity of honey raised anually amounts in value to many millions of dollars. A very large export trade in honey is done by the leading dealers of New York and San Francisco, hundreds of tons being sent to England, the continent of Europe, and, in fact, to all parts of the world. Six bee journals are published in the United States—one weekly and five monthlies,—several of these have a very large and extensive circulation, both in America and throughout the civilised world. There cannot be the least doubt that the honey industry there owes its present position to the diffusion of knowledge through the various

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bee journals. Although America has hitherto taken the leading part, the United Kingdom and many of the continental countries are now pushing for a forward place in advanced bee-culture.

There are several bee journals published on the continent of Europe and one—the *British Bee Journal*—in England. The latter, until lately, was published monthly, but owing to the rapid development of the industry and the increased desire for knowledge pertaining to bees, it has been deemed necessary to publish it fortnightly. Looking at the matter from our stand point, we believe it is quite time that the bee-keepers of New Zealand supported a journal of their own, in order that their interests may not suffer from the want of being represented, more especially, as we believe that in the very near future New Zealand is destined to take her stand as one of the principal honey-producing countries of the world.

The New Zealand and Australian Bee Journal will be devoted exclusively to advanced bee-culture, our motto being "Forward." We shall aim to give the very latest information on the subject from all parts of the world, including all the leading honey market quotations, both local and foreign. We shall make a leading feature of the question and answer department, wherein our subscribers may ask for and receive special information on all subjects in connection with the management of bees. We have always considered this department to be of incalculable value to the beginner, as, in all cases of difficulty, he can apply for and receive advice from those who are most likely to be best able to give it. Our correspondence columns will be open for the discussion of all matters that will tend to the advancement of knowledge in bee-culture, and we cordially invite those of our readers who are in a position to give any information with regard to the honey industry, in any part of the Australasian colonies, to do so. We shall also deem it a favour if all our bee-keeping friends will send us a general report for publication of their apiary and surroundings—that is, the number of colonies of bees in their possession, whether black or Ligurian, the kind of hive in use, their locality whether good or indifferent, the main honey plants in their district, and any other information that may be of value, in order that we may bring our industry prominently before the public.

We are endeavouring to make arrangements whereby we may secure regular contributors from amongst the most advanced bee-keepers in the Australasian colonies, and shall spare no pains in trying to make this Journal—what it is intended it should be—*the* authority in this country on all matters connected with bee-keeping. Of course, the success of a journal of this kind must necessarily depend in a great measure upon the number of its patrons; therefore we would ask our friends and subscribers to do all they can to assist us in our undertaking in the way of securing *new* subscribers, remembering that when helping us they are doing good to themselves. We shall take advantage of the first opportunity to enlarge the Journal, and to make every department as complete as possible.

As the Journal will have an extended circulation throughout the Australasian colonies, more especially amongst the agricultural and settler classes, we consider it will be second to none as an advertising medium between the trader and producer; and as our terms will be moderate, we hope to receive a fair share of support in this department.

In conclusion, we extend our greetings to all and sundry, and anticipate a bright future for bee-keeping in the Australasian colonies, and assure our friends that nothing shall be wanting on our part to make the production of honey one of our leading industries.

EDITORIAL.

CALENDAR—JULY.

If the necessary attention has been given to the bees in preparing them for winter, very little will require to be done during this month. Although July is usually the most wet and stormy month of the year, we occasionally get some warm sunny days, when advantage should be taken of them to examine any stocks that are liable to be running short of food, or that may show signs of being out of order. Bottom boards of hives should also be cleaned where necessary, to destroy any eggs or larvæ of the bee-moth that may be secreted about them; the hive should be placed on a temporary bottom board alongside while this is being done. Any spare combs that are stowed away for next season's use should be examined, and fumigated with sulphur, if attacked by the larvæ of the bee-moth. The foregoing also applies to comb honey.

To Fumigate Combs.—Hang them in a small, close room—or, if only a few, a large tight box, such as a packing case, will do as well—take an old iron pot, put some ashes and hot embers in the bottom, and pour on the sulphur at the rate of one pound for every one hundred cubic feet contained in the room or other receptacle. Place the burning sulphur above the combs, and keep the room or box closed for two or three days.

Feeding.—When feeding becomes necessary to supply a colony with winter stores, it should always be done, if possible, before cold weather sets in, as the bees can take the food more rapidly, and store it where it will be most required. The best food that can be given, of course, is honey; when this is at hand, a frame of sealed honey should be slightly warmed and placed in the centre of the cluster. Next to honey, a good thick syrup or candy made from sugar answers very well. Syrup may be made by adding a half-pint of water to every pound of sugar used—during very cold weather a little less water will be better—put into a saucepan and boil for a few minutes, keeping it stirred to prevent burning; when cool it will be ready for use. Candy—Take, say, 10lbs of sugar, add about three half-pints of water, mix well and boil till it becomes brittle. To test it, dip your finger into cold water, then in the candy, then back into the water. When it breaks easily from the end of your finger it is sufficiently boiled, and should be taken from the fire. As soon as it commences to cool round the side of the saucepan, keep stirring until it gets quite thick. It may then be poured into frames, and, when nearly cold, hang in the hive. Previous to pouring in the candy, the frame should be laid on a perfectly flat board or table, placing a piece of greased stiff paper between the frame and board. The edges of the paper may be lapped round the frame to prevent any candy running underneath. Before putting it in the hive, it would be advisable to take

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a turn or two around the frame with a thin piece of wire to hold the candy secure should the bees eat away the upper portion first.

For feeding syrup, spare empty combs make excellent feeders. Fill the combs by immersing them in the liquid; hang them up to drain, and, when free from drips, hang in the hives. To guard against robbing, all food at this time of year should be placed within the hive.

During wet weather preparations should be made for the ensuing season's work, by making hives, &c., so that everything may be in readiness when required. Now is the time to study and plan for the future and to decide upon a mode of procedure for the coming season. Everything necessary should be done to keep the bees snug and warm, and the hives free from dampness, as excessive moisture in the hive is most injurious to the bees.

PROSPECTS OF FUTURE BEE-KEEPING IN NEW ZEALAND.

During the ten years of our experience of bee-culture in this country, more especially the last four years of it, we have had opportunities of forming a pretty correct idea of what the future of bee-keeping in New Zealand is likely to be. Through business and privately, we have been in communication with bee-keepers in all parts of the colony, from the most of whom we received reports of their doings each season. From these reports we have learnt that the majority of country settlers have been in the habit of keeping a few hives of bees under the old box-hive system, and that large quantities of honey has been raised annually, which has principally been kept for home consumption. The difficulties attending the culture of bees on the box-hive principle deterred many from having anything to do with them, and also prevented others keeping as many hives as they otherwise would have done. But, notwithstanding the disadvantages of the system, the reports went to show that bee-keeping was made highly profitable to those who devoted the necessary care and attention to their bees. The eagerness with which enquiries were made from all parts of the country—when we first began to give a description of modern apiarian appliances, and the method of using them, in the local papers—as to where the appliances could be procured, showed at once that bee-keepers were fully alive to the profits that would be attached to bee-keeping under an improved system.

In 1879 we first began to offer these appliances for sale, and since that time many hundreds of bee-keepers have availed themselves of the opportunity to procure them, and as our reports from some in this issue will show, with a very satisfactory result. Many of our first customers are so well pleased with the result of their experience during the past two or three seasons that they have now determined to devote the whole of their attention to bee-culture, and we feel convinced that, with the same careful management and heedfulness necessary to ensure success in any other occupation, that they will find it an exceedingly profitable undertaking.

One valuable item of knowledge we have gained by experience, and which has assisted us considerably in forming an opinion as to the future of bee-keeping in New Zealand, is the fact that we are not so liable here to those excessive fluctuations in the honey season experienced in most other countries. During our ten years of bee-keeping we have found the seasons average remarkably well; only once in that time have we had what might be called a poor one—the season of 1880-81; even then, with the aid of modern appliances, we were enabled to take a considerable amount of surplus honey. This equality of the honey seasons we look upon as having a very important bearing upon the matter before us, for, with advantages in this respect, a lower average yield per season would pay better in the long run than if we were getting an extraordinary crop one season, and little or none for the two or three following.

Taking into consideration the mildness of our climate, the variety and excellence of our native flora as a bee pasturage, and the suitableness of the country generally for bee-culture, it must be admitted that the bee-keeping industry in New Zealand has a bright future before it. Looking at the extraordinary progress that has been made in the industry in countries not nearly so well adapted for it as ours, and after taking an impartial view of the question in all its bearings, we firmly believe that as soon as scientific bee-culture is thoroughly understood by the majority of our bee-keepers, New Zealand will stand out as one of the foremost honey-producing countries of the world.

APICULTURE IN QUEENSLAND.

(For the New Zealand and Australian Bee Journal.)

C. FULLWOOD, BRISBANE

Apiculture in this colony has sunk to a very low condition indeed. Bee-keeping, as known in America, being almost unknown here until recently.

Some years ago large quantities of bees were kept by farmers and others in a very primitive fashion, and the bush resounded with the hum of the "busy bee." Timber getters, wood carters, and aborigines frequently secured large quantities of honey from hollow trees; both the black bee and stingless bee, peculiar to Australia, were found almost everywhere. Gin cases, tea, or any kind of rough box was appropriated to bee use, and such is the climate, and the yeild of honey so regular, that bees appear to thrive everywhere, and in any kind of hive, so long as they had a cover under which to build their comb and rear their brood. No skill was demanded in their management. Given a swarm—put it in a box, on a stand, under a sheet of bark; then look out for swarms in a few weeks; and, after a while, turn up the box, cut out some honey, or drive the bees into another box to go through the process of building and storing, to be again despoiled in like manner.

No thought about the destruction of brood, waste of honey and wax; no care about the queens. Would not know a queen from a drone, or their value in the hive. What matter if a few boxes (stock) perish? Such was the natural increase by swarming that a few losses were of no consequence.

Anybody could keep bees who had courage enough to rob them. The aborigines knew how to do it. With a tomahawk and fire stick they would attack the "white-fellow sugar bag," and driving the bees with smoke, deprive them of their honey. "Pettigrew's old Irishman" was not required here to teach the Australian aborigines how to rob the bees by means of smoke.

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A few years ago, however, a great change came over the land. A moth, unknown previously, commenced its ravages. The bees succumbed before it, and were rapidly swept away. Farmers owning, from 50 to 200 stock, lost all. The bees in the bush gave way also before the terrible onslaught, leaving the invader all but master of the field. Only a very few individnals, by dint of determined persevering watchfulness and care, managed to save a few stock amid the general devastation.

Bee-keeping naturally came to be viewed as a very precarious, risky and unprofitable business; and, although it has its charms for many, there are but two or three persons in the colony who have any number of stocks, or who attempt bee-keeping as a means of obtaining an income. Several attempts were made to introduce Italian bees, but until recently such attempts proved abortive. It has been affirmed that it was by means of the first attempt to introduce the Italians from America, that instead of Italian bees (that is living bees), the American moth, that has proved so awfuliy destructive, was introduced and acclimatised; and it really does appear to have been the case.

The writer of the present article, however, finally succeeded in safely landing from England five Italian queen bees, direct from the apiary of C. Biunconconi, of Italy. In another paper we will say how it was done and the result.

[We are glad to know that in Mr. Fullwood Queensland has at least one progressive apiarist; and his example will, no doubt, act as a stimulative to other bee-keepers to work their apiaries upon modern principles. We hope through the journal to be the means of placing bee-culture on a scientific basis throughout the whole of the Australasian colonies, and to point out methods by which the difficulties at present experienced may be overcome. We shall be very pleased to receive further papers from Mr. Fullwood. —Ed.

OUR HONEY IMPORTS.

We clip the following from the *British Bee Journal*, for March and April, 1883:—

In accordance with my promise, I beg to subjoin the figures relating to this subject which I have just received from the principal of the Statistical Office. In his letter he remarks that the amount "seems small, but I suppose you would not expect large importations at this time of the year. I have no reason to believe that honey has been brought in to any other ports than those named. If there is anything wanting in accuracy at the start, I will do my best to improve upon our plan of acquiring the information as the months go on so as to have something that can be depended upon when the honey harvest arrives."

As we shall probably find these returns growing in interest from month to month, I make no apology for asking you to publish them.—E. H. Bellairs, Christchurch.

Value of honey imported in London, Jan. 1883:—

				£974
"	"	Liverpool	"	627
"	"	Newhaven	"	6
"	"	Harwich	"	5
				£1612

The value of honey imported into the United Kingdom for February, 1883, amounted to £2,175.

HINTS ON ARRANGING HONEY-HOUSE, WORKSHOP, &c.

(For the N.Z. and A. Bee Journal)

R. WILKIN.

In answer to a question *re* the above, propounded by us, Mr. Wilkin sends the following:—

Most bee-keepers here place their honey-house at one end of their apiary, extract upstairs, and run the honey below where it is drawn off in a cellar. This can hardly be arranged on a piece of ground level enough for an apiary without having a great deal of carrying up and down stairs. As there is a great amount of running about during extracting time, everything in the apiary should be arranged to lessen steps as much as possible, especially as extracting must be done in a hurry, and at a time when skilled assistance is not readily obtainable. Having these points in view, I would place my dwelling ten or fifteen rods below the apiary, surrounding it with trees and vines to ward of the bees. The extracting house I would have in the centre of the apiary, as the carrying of the combs to and from the hives and extracting house is the most important part of the work. As you cannot have your workshop with piles of empty hives, lumber, &c., in your apiary, nor does it suit to have the necessary waggon road to the shop through it, I would make the upstairs of the honey-house my workshop. This building I would locate half way between the centre of the apiary and the dwelling house, for it is about the honey house and workshop that your tools accumulate, and this is the nearest point you can have them for convenience, both to the apiary and dwelling; and, being in line you are thus, in going to and from the apiary, passing just where you require to get or leave something. The extracting house need not be large; mine is 8ft x 12ft, with hives butted up against it. The materials are prepared and kept at the shop, while some for immediate use can at any time be placed in the centre of the apiary, especially empty combs and comb foundation.

The top of your wheelbarrow or wagon for conveying the combs to the extracting house, should come on a level with the table thereon, so that the combs can be put in through a sliding window on to the table without having to lift them. The table should be on a level with the top of the extractors and uncapping arrangement. The honey should run through a pipe from the extractors to the tank in basement of shop, the lower edge of the tank being about 20in. above the floor, for convenience of drawing off the contents. In this basement room you have your arrangements for canning and storing your honey, which can be loaded into a waggon at the door.

Having given this matter much thought, I believe I could say some things to a good purpose for the journals if I had the time. If you think there is anything in this worth publishing, you are welcome to publish it.

San Buenturo, California.

[Of course, we consider any information in connection with bee-culture, coming from so experienced an apiarist as Mr. Wilkin, to be of the greatest value, and shall account ourselves fortunate if we can secure him as a regular contributor to our columns, which we are now endeavouring to do.—Ed.]

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CORRESPONDENCE.

A GREETING TO "THE NEW ZEALAND AND AUSTRALIAN BEE JOURNAL."

DEAR SIR,—It has given me great pleasure to hear of your intention to start a monthly Bee Journal for New Zealand. You have done a great deal already to promote bee-culture in this colony by your articles on the subject, which appeared some years ago in the local papers, and especially by the publication of your very practical and clearly-written "Bee Manual" in 1881, as well as by the example you furnished yourself in the adoption of all the latest improvements in apiary implements, and the arrangements you made for enabling colonial bee-keepers to supply their wants in those matters. Nothing you could now do would tend more to advance the same object than the establishment of a Journal devoted to that speciality, which may be the means of supplying the latest information as to the progress daily made, both at home and abroad, in bee-culture, to all those engaged in that most interesting and useful branch of industry, and which will afford them a convenient opportunity of exchanging their views and experiences, of offering and receiving useful suggestions and information.

Every bee-keeper in the colony, no matter how small his scale of operation, should be glad to avail himself of the advantages offered by such a medium of communication. I trust, therefore, that you may find an ample measure of support in your undertaking, and also that you shall find, in all parts of the colony, correspondents ready and willing to give, through your columns, an unreserved account of their personal experience, with a view to mutual instruction, and thus pave the way for the most practically useful application of every improvement in bee-culture to the peculiar circumstances of our country and climate. That these circumstances are in the highest degree favourable for the purpose has been my conviction since I came to know anything of them. Some three years ago I sought, in some articles upon rural industries, published in the local journal, to draw the attention of the settlers in this district to this amongst other points. There can be no doubt that every farmer would find his household account lessened in keeping a few hives, which he could easily attend to without at all neglecting his other farming business, and which would give an ample supply of honey for his family use, at a very small expense. But these hives must be of the proper sort, and worked upon proper principles. One or two such hives would be worth any number of the barbarous substitutes made out of old candle-boxes and leaky packing-cases, such as one often sees in country places. With the aid of your Bee Manual, and as a reader of your BEE JOURNAL, the farmer would find the working of these few hives on the improved system a source of pleasure and intellectual enjoyment, as well as of profit.

Beyond all this, however, is the more important question of carrying on the industry with a view to production of honey upon a large scale, and for export. This is, of course, a matter for those who are prepared to devote the necessary time, skill, capital and commercial energy to the working of large apiaries. I see no reason why New Zealand should not take one of the first places as a honey producing country. But if this object is to be aimed at, there is every reason why those engaged in the attempt should work together cordially in seeking to establish a character for New Zealand honey, and in the endeavour, if possible, by the intelligent use of our natural advantages, to produce large quantities of the best article, and at the cheapest cost, than any other country, so as to compete on better terms in the foreign market. If such an attempt prove successful there can be no danger of overdoing the industry. The market for honey of acknowledged purity and good quality may be looked upon as unlimited—there need, therefore, be no jealousies between New Zealand and other countries. Let the Home markets be supplied in the first instance by all means, so as to relieve the colony from the reproach of having to import such an article from our friends across the Pacific. In this there will be, and ought to be competition enough; but the field is not very large, and the inducement, as to price, to undertake the extra trouble of putting up the honey in the small parcels, and in the style required to suit the retail markets, will not be found so great as to lead many into the competition.

In seeking to secure a footing in the wholesale market it is of the greatest importance to make a favourable impression as to quality in the first instance, and to keep up the character of the brand afterwards by scrupulous attention to grading of different qualities and the mode of packing. I happen to know, upon good authority, that some New Zealand honey has already got into the London market, which I am informed "was not up to the mark, and found poor sale;" while, as already said, there is, practically speaking, an unlimited demand for the best qualities. Now, we know that the honey gathered in the proper season here, and properly extracted and packed, is at least equal in quality to any we can get from California; we know, also, the importance of starting with a good name, and, therefore, we may easily see the benefit of united action on the part of the producers—not in a futile attempt to keep prices above their natural level—but in the endeavour to produce the best article at the lowest price. I hope that a general conviction of this truth will induce your correspondents to place at your disposal all kinds of information that may be calculated to make your journal practically useful. Any such that I may possess you can always command. I am only a novice in the art myself, and much more prepared to receive than to offer information; but I dare say the great majority of your readers will be in a similar condition. I believe, however, that, especially for beginners, a candid statement of actual experience, in which no attempt is made to disguise mistakes and failures, or exaggerate success, will be found the most useful. Acting in this spirit, I send you a short description of the apiary which my son and myself have started at this place, and an account of last season's operations. With the best wishes for the success of your journal. I remain,

THOS. J. MULVANY.

Bay View, Katikati, June, 1883.

[We tender our thanks to Mr. Mulvany for the kind manner in which he has referred to our endeavours to promote scientific bee-culture in these colonies, and can assure him and our readers that our best efforts will always be directed towards the same end.—ED.]

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ENCOURAGING WORDS.

Sir,—I have read your "Bee Manual" with great pleasure and profit, and must say that it is the best work on bees I have ever read. I can easily see that the profit and pleasure to be derived from bee-keeping may be more than doubled by following the system advocated by you. I may state that I have kept bees for several years, and have been in the habit of marketing my honey in open frames, made of two end pieces and battens all round, which fit into the top boxes, but since reading your "Manual" I have decided to adopt the Langstroth hive altogether. With regard to your directions for making the hive, you state "the end pieces on inside must be rabbeted three-quarters of an inch on;" and again, outside, three-eights of an inch, which, added together, makes 1⅛ inches. Even then, following your directions, as I understand them, I cannot make them fit. If I am wrong, please let me know.

Queen Bee.

[There is a slight misunderstanding. The "Manual" states, after giving the length of the pieces to form the hive: "The end pieces must be rabbeted on inside of upper edge, three-quarters of an inch on by three-eights of an inch deep, to form shoulders for the ends of frames to rest on. The upper edge of the outside of both ends and sides should be rabbeted three-eights of an inch on by five-sixteenths deep." Evidently you have misunderstood the meaning of the word "on." By "on" is meant on the board, *i.e.*, from upper edge toward the bottom edge, and not through the thickness of the board, The depth of the rabbet is through the thickness, and as both rabbets are only three-eights and five-sixteenths combined, there is still left about a quarter-of-an-inch of wood between them.—Ed.]

HUMBLE BEES FOR MATAMATA.

Some few months ago Mr. J. C. Firth, the proprietor of the Matamata Apiary, with his characteristic thoughtfulness for anything that will benefit his adopted country, sent an order to England for a number of nests of the humble bee (*bombus terrstus*). By an unlucky mistake on the part of those at Home, the first consignment—contrary to the order—were shipped too late in the season, and, as might have been expected, the bees were found to be all dead on arrival. This is to be regretted very much, as no doubt the successful introduction and acclimatising of the humble bee would prove a great benefit to the country, inasmuch as the fertilization of the red clover flowers might for a certainty be expected to follow, when farmers could save their own seed instead of having to import it as at present. Mr. J. C. Firth, nothing daunted by the failure, has already despatched another order Home for one hundred nests, with instructions to ship them as early as possible after the bees become dormant next season, which it is expected will be some time in November, when they would arrive here in January next, just at the time red clover is in full blossom. Every precaution will be taken to ensure the safe arrival of the bees, and I sincerely trust that every one of them may live to take flight at Matamata.

Matamata. I. H.

REPORTS, &C.

We shall be glad to receive reports, &c., for this department from bee-keepers in all parts of the Australian colonies.

EXTRAORDINARY YIELD.

For the New Zealand and Australian Bee Journal.

Herewith I give you a report of my season's work for 1882-83: The honey season commenced with us in October and ended in February. White clover, dandelions, ti-tree, Scotch thistle, and flax are our principal honey plants. I started in the spring with 40 strong colonies and 20 nuclei and increased to 120, all Italianized. My yield of honey for the season was 9000lbs. of extracted and 2000lbs. comb-honey, which has all been sold at satisfactory prices. I have extracted as much as 520lbs. of white clover honey in one day, but it is impossible to extract flax honey, as it is so awfully thick; consequently, I was obliged to break up the combs and strain it.

Superiority of Italian Bees.—A word in favour of the Italian (Ligurian) bee. I got as much as 450½lbs., half extracted and half comb-honey, from one pure stock. I kept this hive on a scale to see how much was brought in daily. The greatest quantity gathered in one day was 19lbs. I can say that one Italian colony will produce as much honey as two black ones.

J. Karl.

Ohaupo, N.Z., May 22nd, 1883.

[The above gentleman is using the "Simplified Langstroth Hive," and was one of our first customers for hives, comb-foundation, extractor, &c., shortly after we started in business at the Thames. His report shows what can be done with bees under scientific management.—Ed.]

BEGINNING BEE-KEEPING.

Seeing that you are going to start a New Zealand and Australian Bee Journal, I write to wish you every success. Though I have nothing of any very special interest to communicate, still I fancy that an outline of what I have been doing during the last two seasons may possibly have sufficient interest to others, who, like myself, are beginners in apiculture, to be worth publication. Up to the winter season of 1881, I had never thought of bee keeping in any practical manner, nor had ever in my life had anything to do with handling bees, though I remember having seen them kept in the old straw skeps on the farm in the old country on which I was brought up. During the above-mentioned winter I happened to visit a friend for the purpose of borrowing some books to read, and, whilst overlooking his library, I accidently came across Root's *ABC of Bee Culture*. I borrowed this from mere curiosity, being struck with some of the illustrations; on reading it I became so deeply interested that I determined to try and find out as soon as possible for myself whether these (to me) wonderful statements were facts or not. I set to work at once to find out someone

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who kept bees, and, by great good luck, was directed at the outset of my enquiry to Mr. J. Karl, of Ohaupo, than whom, as you, sir, well know, I could not possibly have found a more obliging or more thoroughly competant guide to what I wanted. Mr. Karl at once showed me his bees (at that time all blacks), and answered all my questions. This, of course, led to further visits, and to my sending for five single story Langstroth hives, with frames and comb. In the spring I obtained four swarms from a neighbour—all in November, I think, but, unfortunately, I have not kept dates. I had intended getting five, but one swarm was such a big one when received, that I decided to top story it, and so used my fifth hive. During the season three of these swarms swarmed again; two of the swarms were hived successfully, one by my wife, the third cleared out; the two were hived in common boxes and had time to fill these before I received more "Langstroth's," when I transferred them successfully. I got an extractor that season, but got it late, as I had not originally intended getting it, so that the bees wasted a lot of time; but, in spite of this, and a lot of mismanagement on my part, I took some 3 cwt. (if not more) of honey, and left the six hives strong. In the autumn I got six more hives from neighbours, condemned bees which I drove—I actually drove seven, but united two. One other I found queenless; but got a queen given me from a handful of starving bees in a box, and introduced her successfully. The whole twelve colonies wintered all right, the six driven ones on candy, the others on their own honey. In early spring I moved them from Pukerimu to this place, a journey of some eleven miles, in a spring trap. When here, fed them with syrup in the open air every morning for a fortnight or so.

This season I have been working for increase, and have now 59 colonies in strong condition. The 12 increased to 47 almost entirely by dividing—two natural swarms among the lot, I think. Three more natural swarms cleared out, but I got three from elsewhere in their place, making a total of 50. I then drove no less than 22 condemned colonies from neighbours all round, making my total up to 72; but, on going through them to see that they were all right for winter, I found several of these so much lighter than I cared for (and besides had two good colonies queenless through having removed their queens to make room for Italians, which I expected, but was too late to get this season) that I united down to 60. During, or probably immediately after, some heavy rain, about a month or five weeks ago, a strong colony that had a leaky roof and got wet through, cleared out on their own account, leaving some honey behind them. So I now commence with 59. These are strong and comfortable, and I have great hopes for the coming season, as I intend to give all my time to the bees and do my best with them. I forgot to mention that of the above 69, eight are hybrids. Mr. Karl most good-naturedly gave me pieces of Italian worker brood, from which I reared queens. Three out of this eight have been hybrids for the greater part of the season, and have shown me most conclusively that they are far away ahead of the blacks for business qualities, but they are terribly cross. I propose to Italianize my whole apiary as soon as I conveniently can do so. As to honey, I am sorry that I cannot give any certain report; will be careful to do so next year, but I am sure I am within the mark in stating that I have had 15cwt. this season; report as to increase I have given fully in the body of this letter. May I ask you, Mr. Editor, or some of your correspondents, to give us a few notes on feeding, more particularly: (1) Do bees in New Zealand winter as well on candy or syrup as on honey? (2) Is candy, or syrup run into empty combs, the best thing for winter feeding? (3) Is candy from white sugar much preferable to, or cheaper than, that from brown?

E. D. H. Daly.

Woodside Apiary,
Hautapu, Waikato, N.Z., May 28th, 1883.

[We have given the necessary instructions on feeding in our calendar for this month, but, in answer to your questions, we may state: 1st. We have wintered bees in New Zealand on candy and syrup with excellent results, but no doubt sealed honey is the best food for them. 2nd. Either will do, but candy should be run into frames (see calendar). 3rd. We believe the white or a good medium sugar to be preferable to the brown for making bee food.—Ed.]

BEE-KEEPING IN THE POVERTY BAY DISTRICT.

So you are going to give us a Bee Journal for New Zealand. I am heartily glad of it, and don't think it comes a day too soon. I am a subscriber to the American "Bee Journal," and am familiar with the names of Root, and Heddon, and Doolittle, and all the rest of the American apiarists, but I declare to you that with the exception of yourself and that enthusiastic experimentalist, Mr Adams, of Gisborne, I could not name a single bee-keeper in New Zealand who uses the moveable frame hive, and am in a state of profound ignorance as to the progress of bee-culture in the colony. This state of things the journal will put an end to, and it is to be hoped that every bee-keeper will subscribe and furnish regular reports. The journal will also be of service in finding customers for our honey, and by bringing it before the notice of the public, will be the means of increasing not only the supply, but the demand for honey.

It would be presumptuous in me, albeit armed by a diligent study of your "Manual," of "Root's ABC Book," "Cowan's British Bee-keeper," and the American journals, to give myself out as an authority on bees; on the contrary, at the close of a year's practical experience, I am more inclined to take what Mark Twain calls a "back seat in the ship," than at the beginning. I propose, therefore, in this article to confine myself to a description of Poverty Bay as a bee-keeping district; of the hive in general use therein; and of the various bee-keepers who use it.

My travels in New Zealand have been chiefly in the Middle Island. I have not been further North than Gisborne; but nowhere are there to be found richer alluvial flats, bearing an abundance of white clover, than in Poverty Bay. For an apiary I should select Makauri as the best district. Here there are miles of cabbage trees and extensive flax swamps on the flats, while the hills behind are covered with scrubby bush, and the soil is the richest in the Bay. The drawback

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to much of the district is its liability to be flooded by the overflow of the Waiapoa River, which would be fatal to an apiary unless each hive was raised considerably above the ground.

Coming to the matter of the hive in use, I fear the Yankees would class us among the old fogy bee-keepers. We have a hive which we have used for many years; we have discovered nothing better, therefore nothing better exists. What do we want with artificial comb? Do you think the bees don't know the best way to do their own work? And who is going to work night and day extracting comb, one at a time, when we can strain the whole lot at once? Besides you say you have no wax, and that pays. These are a sample of the arguments your journal may do something to refute. There is a fertile mission for it here.

In its way our hive is not a bad one. It is not a gin case, though lots of gin cases and worse substitutes are to be found. The hives used in most apiaries consists of a detached bottom board, a case 16in x 10in, 8in deep, with a number of battens along the top, another case for surplus honey fitting over this, but only 6 inches in depth, and a flat top over all; the combs of course are fixtures. As a box hive, the only objection to this one is its style. It is too small. In November and December, when clover is in full bloom, and almost every plant is bearing honey, the queen is in charge of the surplus honey case, and two-thirds of the space is filled with brood. Some bee-keepers delay taking honey till the brood has hatched and the combs are filled up with honey; the majority take off the boxes, cut out and throw away the brood (Maoris are less wasteful, for they eat it) and replace the empty box; but I have only seen one bee-keeper who tiered up the cases and practised returning swarms to the hives.

Almost every farmer keeps a few hives, but till very recently there was only one apiary at Roseland, about three miles from Gisborne, now in the occupation of Mr W. Knights. Mr Knights has occasionally advised me to burn my Langstroth hives. His argument is that his hives cost four shillings, whereas mine are three times that price, and though I may assert that they are capable of producing three times as much honey, not yet being able to demonstrate the fact, he has yet to be convinced of their superiority. Nevertheless he is a most excellent bee-keeper, and has introduced some great improvements into the apiary, both by enlarging the size of the hive, and by the very attractive boxes of comb honey he is now producing. These boxes are framed of wood, with glass sides, and hold 5lbs of honey. On the top of the brood hive is a board with holes bored through it, and over each hole is placed a box which the bees enter and fill with honey. Mr Knights hopes soon to have thousands of these boxes every season, and aims at finding a market in England where comb-honey always commands a good price. At present the bulk of the honey is strained, and the yield from four hundred hives is, I believe, about four tons.

Next in importance to the Roseland Apiary is that of Mr. Thomas U'Ren, Te Arai. This gentleman is a born bee-keeper. His apiary is a pattern of neatness. He thoroughly understands the handling of bees, so far as bees are handled under the old system, and I would specially point him out to you as a promising subject for proselytism. He is particularly directing his attention to the making of honey wines, which he is confident will pay better than honey. This season he made twenty casks of grape, peach, elder and other wines. Not much over a ton of honey was required, yet he reckons these casks worth £10 each. A license is required for this branch of the business; but, in Maori districts especially, there is no doubt of it paying, and Mr. U'Ren will probably utilise the bulk of his yield next season in the making of wine. He has 254 hives, and his yield last season was 2½ tons. This was much below the average, but it was a poor season for honey in this district. The year before he had three tons from much fewer hives.

Mr. Bolton, schoolmaster, of Matawhero, is a very enthusiastic bee-keeper. He is well read up on the subject, and knows what to do—but does not do it. He began in the proper way; he even got the length of importing Ligurian queens, if I am not mistaken; but latterly his scholastic have interfered with his bee-keeping duties, and the bees have had to content themselves with working away in the good old style. Mr. Bolton has just taken a farm of 70 acres, and means to make a specialty of bee-farming, and his knowledge of the art and mechanical ingenuity will, no doubt, enable him to take a leading place among the apiarist of the Bay.

Some of the farmers who keep bees, such as Mr. J. Hammond, Mr. Cahill, and Mr. Saddler adopt the plan of selling the honey in the rough, thus saving themselves all trouble, except securing the swarms. The price asked is 2d to 2½d. Having bought some at the latter price, I found the amount of bee-bread and other unsaleable matter so excessive, that it simply doubled the price, so I gave it up as a bad spec.

Of bee-keepers who use Langstroth hives, and have adopted the modern improvements, there are two—Mr. Adams, stationer, of Gisborne, who has a very nice little experimental apiary of 10 or 12 hives, and myself. My apiary is stationed at Ormond, a district not to be compared in fertility with Makauri and other parts of the Bay, but as I was unsuccessful in getting a suitable place elsewhere, I made a start here. I stocked the apiary with 50 small box hives, bought from Mr. J. Hammond, and sent to Bagnall Bros. for 100 Langstroth hives in the flat. Had I got my hives earlier in the season I would have transferred the swarms to Langstroth hives, but long before I was ready swarming commenced, so I contented myself with securing every swarm, and increase being the main object, did not return any to the hives. I have now 80 in Langstroth hives. I extracted 2000lbs. from 48 of these; the remainder, being January and February swarms, I did not disturb. One difficulty I met with, and I would like to know the experience of other bee-keepers on this point: The honey from flax was so thick that it would scarcely extract, and I found myself at the very start breaking down heavy combs again and again, and only securing a small quantity of the honey in them. In January and February all went well; the honey was light in colour and ran easily, and the bulk of my crop was gathered in these months. To get over the difficulty as much as possible I intend to turn out comb-honey in the first part of the season and to extract later on.

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On the whole I am well enough satisfied with the result of my venture. I did not expect in my first season to do much more than accumulate swarms, but I find that my yield per hive is beyond that of any other bee-keeper in the Bay, which is an encouragement to persevere.

The weather here, during April and May, has been very wet, and the bees have not been able to gather any honey for winter use. As a result, a great deal of robbing has been going on, and my small box hives have dwindled down to 30. If I succeed in wintering these I will transfer them to Langstroth hives in spring. Meantime, if the stores get very low, I shall resort to feeding. Winter is short here; gorse hedges will soon be blooming, and in little over two months the young willow-leaves begin to shoot, while the gums and acacias are in full bloom now; so, if the weather is fine, the bees can always pick up a living.

GEORGE STEPHENSON.

Ormond, 26th May, 1883.

FROM OUR CONTEMPORARIES.

FOUL BROOD AND ITS CURE.

THE following paper by Mr. C. F. Muth, a gentleman who has made the above disease his particular study, was read by him before the National Bee-keepers' Convention at Cincinnati, U. S. A.:—

It is gratifying to observe the growing attention paid by bee-keepers in this country to the dangers of the spread of foul brood. Utah has a bee inspector in every county, a State officer, drawing pay from the State. It would be a move in the right direction if other States would imitate our Mormon brethren in this especial particular, since bee-keeping has become so important a factor in the commonwealth of the country.

It is very essential for every bee-keeper to know his position in regard to foul brood, should it make its appearance in his apiary, as the pleasures and profits would be destroyed if this pest is permitted to become predominant in his neighbourhood. A country like ours, where an abundance of forest trees afford homes for absconding swarms, is very favourable for the spreading of the disease. There would be no end to foul brood in a neighbourhood, after a number of bee-trees become infested, as every bee running over those devastated combs for years afterward, is liable to take home to its own hive the germs of the disease. Let us, therefore, be on our guard.

Foul brood is a disease, imported, and spreads by contagious spores. It is of vegetable growth—a fungus. Little specks of it, hardly discernable with the naked eye, are carried along on the legs of the bees running over infected combs. Wherever one of the spores drops into a cell containing larva, the larva dies, changing soon into a brownish putrid mass, settling into the lower corner of the cell, and foul brood begins its growth. It happens that larvæ are affected and die just before the cells are capped, or while the bees are performing their usual labour, capping, unconscious of the trouble below. We find those cells, a few weeks afterwards, perforated at or near the centre, and easily recognize them as diseased. Larvæ in uncapped cells, killed by this disease, settle into the lower corner as a ropish substance, and dry up in the course of time in a hard, coffe-coloured mass. They are easily recognized.

Bees continually running over these cells will soon carry the micrococcus to a large number of others containing larvæ, until every comb is affected. The putrid stench becomes so strong in the hive that often the bees swarm out in despair, unable, however, to rid themselves of the curse of foul brood adhering to their bodies. The disease does not affect old bees, but, killing off the young, soon decimates a colony.

Micrococcus dropped into empty cells, or cells containing honey or pollen, may remain dormant for years. As soon, however, as the queen deposits eggs in such cells, and they develop into larvæ, the trouble commences. I have had a case where the spores from an infected hive were hidden among the fissures of a plank exposed to the weather for more than twelve months, and were ready to do the mischief the following season when I put a hive on that plank, the bees ran over it and dragged in with them the germ of foul brood.

Dr. Schœnfield has taught us the true nature of foul brood, and that its growth is destroyed by salicylic acid, while Mr. Emil Hilbert found the proper proportion and application whereby foul brood is destroyed without injury to animal or life. Mr. Hilbert applied his medicine by means of an atomizer, subjecting every comb, cell and bee to a spray of the same. Every infected cell had to be disinfected, as also every comb and frame, and the inside of the hive and adjoining surroundings. Several thorough treatments of this kind will cure a colony of foul brood. I have cured quite a number of them in this manner, and speak from experience.

The only objection I now have to the above method is that bees from other hives visit the combs under treatment in your hands, or the open hive before you, and take the spores home with them, and by the time one colony is cured we may find a number of others affected. So it was with me in spite of the greatest care. Mr. Hilbert treats his deseased colonies in a closed room, so that no bees from other hives have access during the time of treatment.

I had come to the conclusion that it was the cheapest and safest remedy to destroy an infected colony, with all the brood, combs and every bee belonging to it. However, I learned a better method this summer. A neighbour offered me, in March, two empty hives and combs, the bees from which had died during winter and were robbed by other bees, as he stated. I was convinced at first sight that those bees had died of foul brood, and sent a warning, to look out, to my neighbouring bee-keepers, one of whom discovered one of his hives affected afterwards and burned it up. In April I discovered two colonies in my apiary affected with the disease. I brimstoned the bees the same evening, burned up the combs and frames, and disinfected the hives. Another colony showed it in May. Feeling sorry to kill a beautiful queen, besides a very strong colony of pure Italians, I brushed them on ten frames of comb foundation, into a clean hive, and placed over them a jar with food, as I shall describe hereafter. The old combs and frames were burned up, and the hives disinfected. This feeding was kept up until all the sheets of comb foundation were built out nicely and filled with brood and honey. It was a beautiful colony of bees about four weeks

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afterwards, full of healthy brood, and with combs as regular as can only be made by the aid of comb foundation. Four more colonies were discovered infected, one after another. All went through the same process, and every one is a healthy colony at present. I was so convinced of the completeness of this cure, that I introduced into one of these colonies my first Cyprian queen sent me by friend Dadant.

All are doing finely now, and no more foul brood. Should, however, another one of my colonies show signs of the disease, it would not be because it had caught it from its neighbour which I had attempted to cure, but because the germ of foul brood was hidden somewhere in the hive, and of late had come in contract with a larva.

The formula of the mixture is as follows:—

16 gr. salicylic acid
16 gr. soda borax
1 oz. water.

I kept on hand a bottle of this mixture, so as to be always ready for an emergency; also a druggist's ounce glass, so that I may know what I am doing. My food was honey, with about 25 per cent. water adding. But we may feed honey or sugar syrup, added to every quart of food an ounce of the above mixture. Bees being without comb and brood, partake of it readily, and by the time their comb foundation is built out, you will find your colony in a healthy and prosperous condition.

Thus you see foul brood can be rooted out completely, and without an extra amount of trouble, provided you are sufficiently impressed with its dangerous, insidious character and are prepared to meet it promptly on its first appearance.

When an atomizer is used on combs and larvæ, the medicine should be only half as strong as given in the formula.

HONEY AS AN ARTICLE OF FOOD.

THE following is taken from a valuable little pamphlet entitled, "Honey as Food and Medicine," published by Mr. T. G. Newman, editor of the *American Bee Journal*, Chicago:—

Pliny speaks of Rumilius Pollio, who possessed marvellous health and strength, at over 100 years of age. Upon being presented to the Emperor Augustus, who inquired the secret of his liveliness of spirits and strength of body at so great an age—he answered: "*Interus melle; exterus eleo*"—Internally through honey; externally through oil.

Among all the myriads of insects, there certainly is none, the product of whose industry is more pleasant and tempting to the palate—more nutritious and health-giving to the body, or more valuable as an article of commerce, than the product by the Bee—delicious and immaculately-pure honey.

How astonishingly appropriate is even its name—Honey! Derived from the Hebrew word *ghoneg*, literally it means DELIGHT. Humanity may, therefore, delight itself with Honey, as long as the sun endureth!

Its early history shows that it was for ages man's principal source of nourishment—and wherever civilization extended its sway, the "little busy bee" was carried as its companion and co-worker in the cause of elevation and refinement.

Why, then, did honey lose its honored place as an article of food? The introduction of sugar gave it the first blow; its use became general in the seventeenth century—and as its use increased, the use of honey decreased, until at length the bee-masters' guild was abolished, and the skill and experience of the old bee-masters were lost.

The introduction of the vile compounds, known as "Table Syrups," with their impurities and adulterations, has had the effect of opening the eyes of consumers, and of re-opening for honey its God-given place as an article of food. Instead of dealing disease and death promiscuously to those who indulge in its use, as do these syrups, honey gives mankind, in the most agreeable manner, both food and medicine.

It is a common expression that honey is a luxury, having nothing to do with the life-giving principle. This is an error—honey is food in one of its most concentrated forms. True, it does not add so much to the growth of muscle as does beefsteak, but it does impart other properties, no less necessary to *health* and vigorous physical and intellectual action! It gives warmth to the system, arouses nervous energy, and gives vigor to *all* the vital functions. To the laborer, it gives strength—to the business man, mental force. Its effects are not like ordinary stimulants, such as spirits, &c., but it produces a healthy action, the results of which are pleasing and permanent—a sweet disposition and a bright intellect.

The use of honey instead of sugar for almost every kind of cooking, is as pleasant for the palate as it is healthy for the stomach. In preparing blackberry, raspberry or strawberry short cake, it is infinitely superior.

Pure honey should always be freely used in every family—Honey eaten upon wheat bread is very beneficial to health.

Children would rather eat bread and honey than bread and butter; one pound of honey will reach as far as two pounds of butter, and has, besides, the advantage that it is far more healthy and pleasant-tasted, and always remains good, while butter soon becomes rancid and often produces cramp in the stomach, eructations, sourness, vomiting and diarrhœa.

Well-purified honey has the quality of preserving, for a long time in a fresh state, anything that may be laid in it or mixed with it, and to prevent its corrupting in a far superior manner to sugar; thus many species of fruit may be preserved by being laid in honey, and by this means will obtain a pleasant taste and give to the stomach a healthy tone. One who has once tried it, will not use sugar for preserving fruit; besides, honey sweetens far more than sugar.

In fact, honey may replace sugar as an ingredient in the cooking of almost any article of food—and at the same time greatly add to its relish.

Digestion (all-potent in its effects on the mind as well as the body) depends largely on the food. Poor food received into a poor stomach is the cause of many unhappy homes—while good, healthy food, received into a healthy stomach becomes "an Angel of Peace" to many a household.

HONEY MARKETS.

We shall be in a position, shortly, to give monthly quotations from the principle honey markets of the world.

EXTRACTED HONEY.

AUCKLAND, July 2nd, 1883.

The demand for extracted honey is very good. Up to the present California has supplied the market but the superiority of the local article has completely closed up the importation. Prices at present are—for 1lb tins, wholesale, 8s 3d to 8s 6d per doz.; retail, 10d to 1s per lb.

AUCKLAND AGRICULTURAL AND MERCANTILE CO., Limited.

AMERICAN HONEY.

A little of this still remains upon the market. Prices—2lbs glassed, wholesale, 24s per doz.; retail 2s 6d per 2lb.; 1lbs, wholesale, 12s per doz.; retail, 1s 3d per 1lb.

COMB HONEY.

Very little in the market; demand fair. Prices for first-class, well filled sections, wholesale, 9s per doz.; retail, 1s per lb.

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EXPERIMENTS IN COMB BUILDING.

BY PAUL L. VIALLON.

To ascertain the quantity of honey or sugar required to build one square foot of comb, and the quantity of honey required for one pound of wax, the following were my experiments:

I took the bees from two colonies, putting them in two empty hives, and confined them in a room arranged for the purpose. I gave them nothing but water for two days, so that I would be certain they would have used all the honey taken during the shaking and brushing into the empty hives. In two cases during my experiments I had to feed after twelve hours, as they showed signs of starvation. Before feeding, I took care to clean out and scrape all the combs they had made. The hives were numbered one and two, the bees weighed every time, so as to always have as much as possible the same amount of bees. Number one contained five and three-fourth lbs., and number two five and one-half pounds of bees.

Fed number one with two pounds of brown sugar made into syrup, and number two with two pounds of white sugar also made into syrup. Number one gave 167 square inches of comb, and number two sixty-eight square inches. I reversed the feeding, and number one gave seventy-seven inches, and number two 148 inches. I fed each with two pounds of honey, and got from number one fifty-five inches, and from number two forty-eight inches. The forty-five inches of comb, including all scrapings, weighed two and one-fourth ounces, and its average thickness one and one-eighth inches. Judging from that, it would take fourteen pounds of honey (without pollen) to make one pound of wax.

By taking the average, it would take about two pounds of brown sugar, four pounds of white sugar, and nearly six pounds of honey to make one square foot of comb of an average thickness of one and one-eighth inches. But as the combs were thicker than those generally built naturally, we may safely reduce the above quantities one-fourth to one-third per cent. Now, as we know from analysis, that honey contains from forty-five to fifty per cent. of grape sugar, we may account for the difference of results between sugar and honey, and I am certain that in a flow of nectar that more inches would be built and more wax secreted from the same amount of saccharine matter, as nectar is composed of fifty-five to sixty per cent. of cane sugar and contains no grape sugar. Having no grape sugar I could not experiment on it so as to see if bees would build combs with it only. I have repeated these experiments several times with but slight variations.

As the above experiments were made without pollen, I went over the same with pollen, and the result was a gain of about fifteen per cent. in inches and quantity of wax. In each experiment I changed bees so as to always have old and young, and always have the queen with the bees. I would also state that it was not always the colony containing the most bees which gave the most wax, and on one occasion using a smaller hive three and one-half pounds of bees gave about the same result.

During the above experiments I had a chance to observe the eggs laid by the queens which they would do moderately as the combs were built, and noticed that when fed with sugar the eggs were removed by the bees; in one instance a few remained in the cells and seemed to be dead, nearly as soon as hatched; with the honey a few eggs would hatch, but the young worm would be invariably removed in two or three days. This living of the worm was due, I suppose to the small quantity of pollen contained in the honey, as, after diluting the honey and filtering it, the result was the same as with sugar. I went so far as to give them a frame containing eggs and larvæ one day old, taking care that there was not a grain of pollen, and continued the feeding with honey, and in twenty-four or thirty hours all the eggs and larvæ had been removed by the bees. After several other trials with negative results, I collected some pollen from some combs and gave it to them during the feeding, and in every case the eggs hatched and the worms went through all the ordinary phases and hatched perfect bees, and I came to the conclusion that without pollen or a substitute, no brood was reared. In all the operations, I always had some water in the hive.

As these experiments were made in confinement, I intend to repeat those in regard to the quantity of honey required to make one pound of wax in the open air, as soon as there is no flow of nectar from the field, though there is always a little; but I will place another hive with the same amount of bees on a scale and watch if there is any honey coming in during the experiment, and deduct the difference. If it was possible to obtain enough nectar, I am certain the result would be the same as with brown sugar, and that not more than five or six pounds of honey is required to make one pound of wax. I believe that in the open air the bee will give more wax, as being at liberty they will work with courage.

By these experiments, you will see that some of the feed is stored in the cells, and the feeding must be pushed a little further, and when the combs are removed, they must be weighed with the little honey in them, these washed and re-weighed after they are dried, and the amount of honey deducted, etc., from the amount fed.

You will excuse me if I do not enter into more minute details, but I think that you will fully understand how the experiments were made, and that you will be able to repeat them, and I hope your result may corroborate mine. Do not be afraid to ask for more details, as I am at your service, and will cheerfully give them.

Bayon Goula, La.—*Bee and Poultry Magazine*, for March, 1883.

NOTICES TO CORRESPONDENTS.

JAMES CRUICKSHANK, Greenlaw, Matakana. — Write to Messrs Bagnall Bros. and Co., Turua, Thames, for a price list of their Extractors, Smokers, &c. We expect to have some seeds for sale in the spring, when we will advertise the same in the JOURNAL.

C. W. B., Te Korito, Wanganui.—We do not advertise Cyprian bees. As far as appearances are concerned, we do not see any difference between our Holyland and Italian bees. We know that the Holylanders raise more brood than the Italians, but have not yet had an opportunity to thoroughly test their honey-gathering qualities as against the latter variety.

R. B., Newcastle, N.S.W.—The second edition of the *New Zealand Bee Manual* has been published. Write to the publishers, Messrs Champtaloup and Cooper, Auckland, N.Z., who will, no doubt, supply you.

AN exchange remarks: The sting of a bee, it is said, when compared with the point of a fine needle under a powerful magnifying glass, is scarcely discernible. But the trouble is, that when a man gets a bee sting, he forgets to compare it with a needle; hence it always is discernible, and by a large majority.

THE STRENGTH OF BEES.—The *Norristown Herald* makes the following comparison between the strength of bees and horses:—Mons. Pateau has discovered that while a horse can pull only six-sevenths of its weight, a bee can pull twenty times its weight. When some one discovers how to grow bees as large as horses, the latter will have to take a back seat. But it would be fatal to fool arounnd the heels of such a bee. With its javelin it could pin a man against the side of the stable. Perhaps it would be better not to raise bees any larger than the present crop.

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QUERIES AND REPLIES.

We shall from time to time give replies through this department to questions pertaining to bee-culture, propounded by our subscribers. We would ask our correspondents to be as concise as possible, and to number their questions 1, 2, 3, *and so on.*

QUERY.—*Diseased Bees.*—Will you give me your opinion and advice concerning a disease which is among the bees in this district. On looking over the combs of some affected colonies, I find them partly filled with dead brood, the same as you describe under the head of "Foul Brood," in your *Bee Manual*—"brown and salvy." The caps of the cells concave instead of convex, and have a little hole through them. I have never seen it mentioned in any work on bee-culture when speaking of foul brood, that the old bees die off in hundreds. Last spring I had four strong stocks in box hives affected in this way. I had just got some hives from Bagnall Bros., so I drove the bees into the clean boxes, let them work in there for a week, and then put them in the new hives on comb foundation. They all worked well until a month ago, when I saw one had foul brood in the combs, and the old bees commenced dying in great numbers every day until I thought it was time to destroy them. The other three stocks, as far as I can see, are doing first class.—
J. L., Bulls, Rangatikei, Wellington.

REPLY.—From your description of the disease affecting your bees, there can be no doubt, we think, about its being a case of foul brood, although this would not cause the old bees to die off, as it is only a disease of the brood, and not of the bees. Possibly the colony had become weak, and robber bees had attacked it, in which case the large number of dead bees you speak of would be accounted for. We would advise the most stringent measures being adopted to eradicate the disease. In another column will be found a paper on "Foul Brood and its Cure."

QUERY.—*Transferring Bees.* I have several colonies of bees in box hives, and after reading your *Bee Manual* have decided to start on the scientific method. I see you recommend transferring in early spring. Would it be better to allow the bees to swarm first, putting the swarms into improved hives, and then transfer the box hives afterwards?
E. B., Dunedin.

REPLY.—No; it would certainly not be the better way. The sooner you can get the bees transferred the more profitable you will find them, as, when once in movable comb hives, with proper management, a very much larger increase could be procured, if increase were required. We have known cases when half the season has been lost through waiting for box hives to swarm.

QUERY.—R. H., North Oruawharo.—Having taken an interest lately in bee matters, and perused your book in which I have found a great deal of fresh information, I find one or two things therein I don't quite understand, and should be obliged if you will kindly explain. 1st. Will comb out of other swarms do instead of foundation, say out of a rata tree? 2nd. Is it better to fill the frames with comb, or will narrow strips do to cause the bees to work straight? 3rd. Where do the tin separators go? 4th. What is the value of honey per pound. I have four swarms on the old gin case system. I sold ten shillings worth of honey last year, not "bilge water," but equal to the best, at fourpence per pound. I could have sold more if I had had it. I do not sulphur the bees but go dressed, lift the box, shake it, and when I think most of the bees are out, I dump the box on the ground, clear the bees that stick to the comb, gather them up and put them into the box again after the comb is out. One stock has remained, after being treated in this way three times, but most of the others, after collecting themselves together, clear out. I should have had one dozen swarms if they had remained. Of course, since reading your book, I mean to turn over a new leaf. I have since found out where the tin separators go.

REPLY.—1st. Yes; providing it be nice, clean, straight-worker comb, otherwise it would be better to melt it into wax. 2nd. Narrow strips will do to make the bees build straight combs; but the profit of using comb foundation lies in giving the bees all they require. 3rd. requires no answer. 4th. It depends upon the kind, whether comb or extracted, quality, and your market. At Auckland and Thames we have been getting ninepence per pound for comb, and eightpence for extracted, wholesale. At present there is really no market quotations for local honey in New Zealand that we are aware of, which state of things alone shows the necessity of bee-keepers supporting a representative journal. [Since the above was in type we have obtained the Auckland quotations which see.] We do not wonder that the bees "clear out" after such treatment as you describe. We really cannot tell which would be the most humane to sulphur or *dump* the bees. We are, however, very pleased to hear that you intend to follow the instructions given in the *Manual*, and that it has been the means of preventing further cruelty on your part.

QUERY.—T. O'R., Hampden, Nelson. One of my little girls got a swarm of bees two years back and they have increased very rapidly as she has now 21 boxes of bees, besides a great many swarms have absconded. They are all in gin cases and I see no way of getting the honey at any time except by the old process of destroying the bees, which I consider a most barbarous practise. In looking over your *Bee Manual* I find that it gives very clear instructions on the improved methods of bee-culture. What I would like to know is this—would it be better to keep the bees until I could transfer them into proper frame hives than have recourse to the objectionable mode of killing them to obtain their honey?

REPLY.—By all means keep the bees and procure, or make, frame hives ready to transfer them into in the spring. We cannot see the necessity of asking such a question when you have our *Manual* on hand.

SPECIAL NOTICES.

QUERY AND REPLY DEPARTMENT.—Correspondence for this department should reach the editor not later than the 15th of each month, when replies are required in the next issue.

ADVERTISING DEPARTMENT.—Advertisements for the next issue should reach the publisher by the 24th of each month.

SUBSCRIPTIONS, ETC.—P.O. orders for Subscriptions, Advertisements, &c. to be made payable at chief P. O., Auckland, and drawn in favour of Mr J. C. Firth.

Correspondence for publication may be sent at book post rates, *i.e.*, one penny for every two ounces, providing the book post regulations are complied with, and the words "Press Manuscript" are written on outside of cover.

Our Correspondents will oblige by writing articles for publication on one side of the sheet only.

Sample copies of this Journal sent free to any address on receipt of six pence in stamps.

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Devoted exclusively to Advanced Bee Culture.

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CALENDAR.—AUGUST.

In fairly strong colonies, breeding will commence this month, consequently more food will be consumed, so that it is necessary to see that each colony is well supplied. Those that have had but a scanty supply for winter use will now be getting short, and should be fed according to the directions given last month. As dysentery is apt to make its appearance amongst bees that are not well cared for at this time of the year, and as cold and dampness combined within the hive is the principal cause, it should be seen to that the interior of the hives be kept dry and the colony snug and warm. An extra layer or two of some warm, porous material over the tops of the frames will be found of great benefit in retaining the heat, without interfering with the ventilation in any marked degree. The instructions given last month with regard to cleaning bottom boards, etc., is also applicable to this.

As the season is now fast approaching, when bee-keepers who have already established their apiaries upon modern principles — and we know of a large number in these colonies—will be looking forward for a return on the capital expended, it behoves such to be sure that they do not lack in what is required of *them*. As the work in an apiary is divided between the bees and bee-keeper—the work of the latter being essential to that of the former,—and as we know that the bees will perform their part of the work, so it remains with the bee-keeper whether his apiary will turn out a success or otherwise. Of course, we refer to an ordinary season, although systematic work is just as much required, or perhaps more so, in a poor than in a good season; for the most slovenly bee-keeper might be successful in a good season, whereas he would entirely fail in an ordinary one.

One of the chief points to be observed is to have everything on hand when required, such as hives, comb-foundation, etc., not to leave the making or purchasing of these things until the bees are swarming. Hives should be made up or ordered from the dealers in time to have them painted and ready for use not later than the end of September. For, although they may not be required for two or three weeks, it is better to have them on hand, as the season may come in earlier than usual. We would advise those who get their hives, etc., from the dealers to send in their orders early, as there is usually a large rush for these things just before and about swarming time. Delays in executing some of the orders at this time are sure to occur, when the blame is put upon the dealer, and really it is the bee-keeper's own fault for not sending his order

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at an earlier date. Having been in the supply trade, we speak from experience. We cannot recommend too strongly the carrying out of the foregoing instructions.

OUR POSTAL REGULATIONS.

We think that it is quite time that some of our Postal regulations were amended. We are reminded of this by the fact of having to pay book-rate postage on all copies of this journal posted to places beyond New Zealand. We consider these regulations are highly detrimental to the interests of this country by tending to prevent the publication of journals which look for support outside as well as within the colony.

Our journal is classed by the authorities as a magazine, and, therefore, charged book-post rates when posted to foreign countries, *i.e.*, "one penny not exceeding one ounce; twopence not exceeding two ounces; and twopence for every additional two ounces, or fraction of two ounces." As the journal with the wrapper weighs one and a half ounces, it is necessary to put on a twopenny stamp if only posted to Australia, while a newspaper of any weight—there is no limit to weight in the regulaions—may be sent to Australia, the United Kingdom, Canada, or the United States for one penny. We are also debarred the privilege enjoyed by the publishers of newspapers, that is, franking exchanges.

We receive each mail a number of journals from England and America, some of them weighing three times as much as our own, and yet they only bear a penny stamp; while under our regulations a journal of the same weight sent from this country would require a sixpenny stamp. We have an American magazine lying on our desk, equal in weight to this journal, bearing a half-penny stamp. It is really difficult to understand why our postal authorities have so heavily handicapped our journals. We have in consequence been obliged to charge our foreign subscribers 7s. per annum instead of 6s., very much against our will. This, of course, must have a detrimental effect on the foreign circulation of a journal of this kind, which, more or less, is against the interests of the colony. This publication being the only one in the Australian colonies representing an industry that we may say is entirely new here, and we feel sure will become an extensive one in a short time; anything that will tend to hinder the circulation of it will work injuriously to the interests of the industry.

The regulations have already had the effect of preventing us using stouter paper in the journal. We had intended to print the journal on stout paper in future, but the mail that brought us a sample of the paper also brought us a copy of a letter from the postal authorities apprising us of their decision. As the journal printed on stout paper would weigh over two ounces, we decided at once to keep on with the present class of paper rather than pay fourpence for foreign postage. We shall represent the injustice of the present regulations to the proper authorities and hope they will at once see the advisability of amending them.

THE LANGSTROTH HIVE.

One of the first questions that is pretty certain to occupy the mind of the prospective bee-keeper—especially if he has had the opportunity of reading works on bee-culture by different authors—is: Which hive shall I adopt? Without doubt it is a question of a very perplexing nature to beginners; for, after the perusal of different works, with the idea, perhaps, of getting some assistance from them in arriving at a definite conclusion, they invariably find the question more embarrassing than ever, from the fact that each author will most likely recommend a different hive. The usual course, after a person has got into a perfect fog over the matter, is to write to the editor of a bee-journal for information, then comes the ott-repeated question, "Which is the best hive?" The editors, as a rule, generally succeed in finally disposing of the question to the satisfaction of all parties concerned.

From the fact that so many different sizes of hives are recommended by various bee-keepers of some experience, we may safely conclude that we have not yet got a perfect hive in any one of them. No doubt many of those in use at the present time and which have been given some high-sounding names by the makers, have not been gotten up with any special regard to the merits they possess, but simply to catch the unwary beginner. These hives, however, have, comparatively speaking, but a very short run, and then drop into oblivion; but, in the meantime, they have answered the purpose of the original maker to the detriment of the purchaser.

Time after time have we been asked the above question by persons residing in various parts of the Australasian colonies, notwithstanding the fact that we have taken every opportunity of advocating the use of the Langstroth hive, both through the local Press and the "*New Zealand Bee Manual.*" It is not necessary here to recapitulate the details of our experience in arriving at the conclusion that the Langstroth hive is the best for all purposes, as we have already published them in full on more than one occasion. Suffice it to say that we were five years experimenting with various kinds of hives before adopting the "Langstroth;" and now, after five years' use of it, we feel more confidence than ever in recommending it to others. There may be other hives which will give equally as good results under experienced management; but, for simplicity of construction, its adaptability for all purposes, and the ease with which it may be manipulated, we believe there is not its equal in use at the present time. We have only to take into consideration the length of time that has elapsed since the Rev. Mr. Langstroth invented this hive (we believe about 30 years), and the fact that there are probably more of them in use now than all the rest put together, to be convinced that it *must* possess advantages not to be found in any of the others.

Since we introduced it into these colonies thousands have been made by manufacturers, and sent to all parts, giving entire satisfaction to all who are using them. We do not make or sell them now, therefore we have no interest in recommending this particular hive whatever, beyond the wish to see bee-keepers in the Australasian colonies adopt what we believe to be the best one. To all intending bee-keepers, and others who may be in doubt about the matter, we say: Try the Langstroth hive.

Sweet Home.—A bee-hive.

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STANDARD FRAME FOR AUSTRALASIA.

THE necessity of adopting a standard frame, *i.e.*—a frame of a size that shall be generally used amongst bee-keepers throughout the country—has been felt for some time past in Great Britain and America, where scientific bee-culture has, so to speak, passed its first stage. The disadvantages arising from having a number of hives and frames of different dimensions in use in the same country, must be apparent to any bee-keeper giving the matter the least thought. Its injurious effects would not be noticeable amongst bee-keepers in these colonies for some time to come, but they would assuredly overtake us sooner or later, did we not steer clear of the error that our brother apiarists, in the countries above mentioned, have fallen into. Of course, the knowledge of this error has only been gained by experience, and could hardly have been forseen before bee-culture came to be so extensively practised as it is at present. It now only remains for us—the bee-keepers of the Australasian colonies — to profit by the experience of others, and adopt in the outset a Standard frame.

We will now point out some of the advantages of using a standard frame. In the first place, hives, sections, &c., could be obtained from the manufacturers at a much cheaper rate if they were required to make and keep in stock one size only, instead of several. In the next place, bee-keepers would find a more ready sale for their hives and bees, should they require to dispose of them, if their hives were of a uniform size with those in general use. There are also other implements, such as the extractor, which could be procured at a cheaper rate if but one size were needed. As these have to be made to suit each particular frame where several are in use, it is necessary that manufacturers and dealers keep in stock the different sizes suitable to the various frames, which, of course, adds to the expense of each. We could point out other advantages in using a standard frame, but we think we have enumerated sufficient to show the advisability of at once deciding upon a size of frame that shall be taken as a standard for these colonies.

The great obstacles in the way of introducing a standard size in England or America, are, first, the large amount of capital that has been expended on various sizes of frames and hives; and, secondly, the opposition of interested parties, who appear to be afraid that if a standard frame were adopted their own particular hive would be blotted out of existence.

Referring to the difficulty that would be experienced now in introducing a standard frame in England, the editor of the *British Bee Journal* makes the following remarks in the March number of 1882 :—"The Standard-frame question was mooted by us in the winter of 1875, and had it been taken up by the Association at that time, when there were comparatively few frame-hives, or frame-hive makers, in England, it would have been easy of adoption. Now, when there are a hundred times as many hive-makers and vendors, and a thousand times as many hives in existence, it will be many years before a Standard will become general, because its introduction will be essentially slow. Manufacturers will object to it because it will necessitate the making (in most, if not in all instances) of a hive differing from that they already produce; and working hive-makers, with limited means, may find this a hardship, because it will necessitate having a double stock in preparation for the season."

Here we have no such obstacles in the way at present, and therefore could not possibly choose a better time for adopting a standard frame. We shall continue the subject in our next issue.

FERTILIZING RED CLOVER AT MATAMATA.

IN this field Mr. Firth proposes to attempt the fertilisation of the red clover seed on a large scale. In the course of the first few days in February it was the intention of Mr Isaac Hopkins, the manager of the Matamata Apiary, to move 150 strong colonies, partly common and partly Ligurian, bees into this field. On the lawn at Matamata, and at other points in the neighbourhood of the apiary, when the clover had been cut, there was a very remarkable and very encouraging appearance of seed heads on the second crop. In some of the heads the seeds had just begun to form, while in others the seed was well grown, although in none that we inspected did we see the seed so far advanced as to assume the colour peculiar to it. This, however, is only a question of time. As the seeds obtained from many of the clover heads was of an unusual size, when such well-grown seed has been fully matured, it is not unreasonable to expect that their produce will be clover plants of more than ordinary vigour. In fact, an improvement of the clover plant may fairly be expected with a little judicious care and selection. All the patches of clover in which we found abundance of fertilized seed heads were situated within less than a mile of the apiary, and an equally beneficial result may fairly be expected in No. 2 clover field when Mr. Hopkins's army of little busy workers have been introduced to it. This field is too distant from the present apiary for the bees to work on it with satisfactory results.—*Auckland Weekly News*, Feb. 3rd, 1883.

[Shortly after moving about 50 hives to the clover paddock, bad weather came on, and continued at intervals the whole time the clover was in blossom, so that we did not succeed in getting a test on a large scale; but we have faith in the fertilization being carried out successfully at some future time.—ED.]

(For the N.Z. and A. Bee Journal.)

MAKING AN IMPROVED HONEY-EXTRACTOR.

R. WILKIN.

[THE following is an account of Mr. Wilkin's method of making an improved honey-extractor that will extract from a number of combs at once, and, at the same time, do away with the work of lifting and turning them necessary in the ordinary extractors. The combs are placed in wire baskets, hinged or pivoted at one end. After extracting from one side of the comb, the motion of the extractor is reversed, which cause the baskets to make a half revolution, thus bringing the other side to the front. The amount of time and labour that would be saved by the use of these extractors in large apiaries would be enormous. We are having one made, and as soon as it is in working order we will publish a detailed description of it for the benefit of our readers.—ED.]

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Since last writing you, I concluded that I could make an eight or ten frame extractor, better proportioned and to work better than one to take a less number. There is also another advantage in a large extractor—the greater circumference gives speed enough without gearing. I wished to make mine all myself, so that I could modify it to suit me. The expenses were—material, eleven dollars, including one dollar for blacksmithing, and nine days work of my own. I suppose a good tinner would have done it in five or six days. The baskets to hold the combs is the largest job. These are, of course, made with two sides, like a narrow case ; each side being similar to the sides of the ordinary extractors. After making the revolving parts, I made a wooden box and lined it with tin, to turn the baskets in. On the centre of the bottom, I soldered a broad nut with a pivot 2in. long and $\frac{3}{8}$in. in diameter standing firmly in it, the point being rounded off for the journal to rest on. The journal is a gas-pipe, $\frac{3}{4}$in. in diameter ; a rod of iron, 2in. in length, is driven into the lower end of it until the rod goes up the pipe about an inch. Weld it solid there, and drill a little hole into the end for the pivot to work in. I now make a funnel or cone out of a sheet of tin, and solder another sheet over the large end of it. A hole is punched through the centre of this sheet the size of the journal ; the little end of the cone or funnel must be just the size of the journal. Now slip this on the journal little end down. Make another cone the same size, and put it on the journal from below, little end up. Let the two small ends of the cones meet—the bottom end of the lower cone being about even with the end of gas-pipe—and solder them securely to the journal. The large ends of the cones are also soldered to the journal. At this stage it has somewhat the appearance of a large hour-glass. Between the cones I solder a band of tin, 6in. wide by 14in. long, to stiffen them and make all solid.

These cones or funnels are mainly to rest the arms on which support the baskets. The arms I make of tin rolled double thickness, $\frac{1}{2}$in. in diameter (larger might be better). Into these I drive a plug of wood where most strength is required to prevent their giving way. The eight upper arms are soldered in their respective places on the large end of the upper cone ; the ends of the arms being also soldered securely to the journal. Now invert the journal and solder the other eight arms on the large end of the lower cone in the same manner.

Each basket to hold the Langstroth frame is made of two sheets of wire cloth 10in. x 16in. soldered inside against strips of folded tin to strengthen them. The bent tin forming the back of the baskets should extend above and below them 2$\frac{1}{4}$in., and have a rivet soldered in each end as pivots to work in holes punched through the tin arms (three inches of the ends being flattened for this purpose), 1$\frac{1}{4}$in. from their outer ends for the upper part of the basket, the lower part being set a $\frac{1}{2}$in. farther in towards the journal. This slight incline of the baskets cause them to stand in place when the motion of the extractor is reversed. The supports for the lower ends of the frames at the bottom of the baskets should extend $\frac{3}{4}$in. below the baskets and be made stiff and flat, or the heavy combs will bend them down in the centre, and cause the frames to stand out from the sides of the baskets, leaving the combs without support. In this case the centrifugal force required to throw out the honey would break the combs away from the frames.

In the bent part of the back, or hinged end of the baskets, solder pieces of tin like the face of a thermometer 2in. x 21in. to stiffen them. Folded strips of tin should reach from the outer end of each upper arm to the arms at each side below, and be soldered together where they cross ; thus firmly binding all the arms to each other. The strips also answer for the baskets to rest against when the extractor is in motion. I must now go out to the apiary and take measurements.

The gas-pipe or journal is 30in. in length ; arms, 18$\frac{1}{2}$in.; space between upper and lower arms at journal, 21in ; lower arms above lower end of journal, 2in.; above bottom of tank or box, 3in. The box or tank is 39in. square, by 27in. high, inside measure. A cross-bar, 2 x 4in., is placed across the centre of the top ; or, one edge may be flush with the centre, and a keeper screwed on for the upper end of the journal to work in. Let down the ends of bar $\frac{1}{4}$in. on to the tank. The large ends of the cones or funnels are 13in. in diameter ; the sheet soldered on them might extend out all round a $\frac{1}{2}$in. to give additional bracing. Of course, one brace under each arm might answer the purpose, but is not so strong. The crank or handle for turning the extractor is 6in. long, placed right on the upper end of journal. So you see your eight baskets are all hinged to the outer ends of the arms and turn in towards the journal between them. Solder the braces of your baskets well. It looks very simple when finished, but, like most other things, difficult to describe without diagrams.

I am really delighted with the way mine moves off. If I find any defects I will let you know ; I have only just commenced to use it. The great improvement lies in extracting eight combs at a time, instead of two or four, and reversing them as often as required without having to lift them out. This often is the cause of breaking new combs.

Later.—The only defect I find in the extractor is weakness in the outer bracing of the arms.

June 4th.—We are now extracting freely the most delightful honey.

San Buena Ventura,
California, May 7th, 1883.

BEE-KEEPING AT MATAMATA.

THE MATAMATA APIARY.

Before leaving the bee question we may allude to Mr Hopkins's opinion of the Matamata district as a location for a bee-farm. On visiting the Matamata Apiary, Mr I. Hopkins, the manager, kindly showed us through his workshop and bee-farm. The work-shop is a substantial building, 34 feet by 14 feet, to which is about to be added an office, honey room, and fumigating room. At one end of the present building is the wax room, 14 feet by 14 feet. In this there is fitted a large stove, having two pairs of boilers, or water baths, for the purpose of melting the beeswax used in the construction of artificial comb foundation, a large quantity of which was just being packed for shipment at the time of our visit. Mr Hopkins informed us that during the last four months he had made up nearly a ton, the whole of which, with the exception of 300lbs. used in the Matamata Apiary, had been sent to order to various parts of the colony. We saw a very fine sample of thin

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foundation made on a new machine lately imported. This quality is made specially for use in section boxes (comb honey). Mr Hopkins has made several labour-saving appliances in this department to facilitate the work, and he intends, with the rapidly increasing demand for comb foundation, to be in a position to supply his customers as hitherto with the best and most improved makes of this article. The other part of the shop is used for making hives, section boxes, honey crates, queen cages, and all the various appliances used in the apiary. In this part we saw a very ingenious contrivance for cramping the different parts of the hives together, and holding them firmly while nailing the pieces. As there are 98 pieces to each complete two-storey hive, it will be seen how useful and necessary an appliance of this kind must be where hundreds of hives are being made up during a season.

On leaving the workshop to inspect the apiary—which is situated in a sheltered hollow, about 100 yards from the workshop—we passed over a considerable area of ground devoted to the propagation of various honey plants, the seeds of which have been obtained from different parts of the world. There we saw the celebrated white and purple sage from California ; mellilot clover, six feet high; Cleopmeungens (spider plant); figwort (Scrofularia nodosa); motherwort, catnip, silver hull buckwheat, and giant mignonette from the United States ; as well as Phacilia, Arabis Alpinus, and Limnanthus Douglasii from England. All the above, we were informed, are amongst the best honey plants known. As cultivating for bees has now been proved to be a profitable work in America, we doubt not that the area thus planted will form the nucleus of an extensive honey farm in the future.

The apiary itself is a sight well worth a visit to Matamata. The long rows of white painted hives standing out in relief against a background of dark green—formed by a clump of tall ti-tree—the continuous flight to and fro of myriads of bees overhead, their loud contented hum, and the delightful fragrance of the honey plants in blossom around the apiary adds one other charm to Matamata. The number of colonies in the apiary at the commencement of the season, including those brought from the Thames and Waikato, was 99 ; but several of those from the Waikato died from the effects of moving such a long distance over a bad road—being very weak at the time of removal—and others in a weak state were amalgamated, so that the number was reduced to about 70 at the commencement of the clover harvest. These, with careful management, were rapidly strengthened and increased by natural and artificial swarming till the number stood at the time of our visit 170 strong colonies and 16 nuclei. Owing to the weak state of the colonies at the start, together with the lateness of the season, Mr Hopkins considered it advisable not to work for honey for market this year, but to increase the bees all he could, and to Italianise them all if possible. This so far he has accomplished beyond his expectations. We noticed most of the hives were two and three storys high, and in one case five storeys high. Mr Hopkins informed us that this colony is a swarm of the present season, and on the 19th January had stored nearly 180lbs. surplus honey. He then gave them another story, in which they are now working, and expects them to finish it before the season is past. This will make another 60lbs., or 240lbs. surplus honey in all, without counting the lower story, which will be left for the bees' winter stores. Besides storing all this honey, they have built out 50 sheets (50 square feet), of comb to store it in. The parent colony has thrown off another swarm besides this, which has 210lbs. surplus honey. This, together with about 100lbs. it has itself, makes for the one colony and its increase 460lbs. surplus honey, and the season not yet ended. This is a result truly wonderful. Many other colonies have done remarkably well ; in fact, all of them have a large amount of surplus honey, which will be made use of to increase the bees. Mr Hopkins estimates that had his colonies been in good condition at the start of the season, he could have raised five tons of honey before the close of it.

Queen-rearing is quite a feature in this apiary. They are being raised from the best of the imported stock, both for sale and home use. The imported bees consist of Ligurian and Holylanders, which Mr Hopkins has proved to be far superior to the black bee. It may be as well to mention that the colony that has stored so much honey is a hybrid—a cross between the Ligurian and black bees, which by some are considered as good honey gatherers as the pure Ligurian, although not so gentle. The very large number of bees seen working on the second crop of flowers of the red clover, and the heads of clover well filled with embryo seed, speaks well for the theory so often advanced, viz., that the red clover *can* be fertilised by the honey bee. A book is kept (the Apiary Register) in which the history of each colony is given, and the dates of the various manipulations, for reference at any time, so that everything here is done in a systematic manner. Altogether, we were extremely well pleased with our visit, and must congratulate the proprietor, Mr J. C. Firth, and the manager on the success of the honey industry at Matamata ; for it is now proved, beyond a doubt, that the honey resources of the district are practically without limit. We are aware of many apiaries being started on the scientific principle in this country, and believe there is a grand future for bee-keeping in New Zealand.—Auckland *Weekly News*, Feb. 3rd, 1883.

[Since the above was published the additions have been made to the workshop.

We have been asked by a bee-keeper who has read the above, our reason for having so many stories on our hives. We will explain. We were but just forming the apiary and had no convenient place for storing the honey at the time, and, as we did not intend to send any to market, the safest place for it was on the hives. —Ed.]

Grading Comb Honey.—The Thurber Bros., of New York, have the following to say on this subject :—Comb honey must be graded all throughout the crate of uniform colour, and the sections well filled. Showing the best only on the outside, and filling the interior with a lower grade, works disastrously to the shipper and is not even policy. The more attractive in appearance the honey is, the quicker the sale and the better the price. Honest grading tells very quickly, purchasers usually leaving orders for the whole of the next consignment of the brand which has pleased them in this respect. Thus it will be seen, that while the market may be filled with a fair quality, these special brands find ready sale on arrival, whilst others drag, causing returns to come in slowly.

The annual consumption of honey in Paris alone, says the *American Bee Keepers' Exchange*, is estimated at 20,000 tons. As many as twenty houses are engaged in the trade.

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(*For the N. Z. and A. Bee Journal.*)

All correspondence must bear the name and address of the writer, not necessarily for publication, but as a guarantee of good faith.

HIVING TRAY.

Sir,—I herewith send you a description of a hiving tray which, I may say, I was forced to invent. I did not succeed very well in getting swarms into frame hives before I made the tray. Now I can do it so handily that I often have the hive with the new swarm placed in its permanent position in half an hour after the swarm issued; for, when the bees are in their new quarters, the sooner they are put where they are to remain the better; if the bees are slow in going up, I let them remain where I took them till sundown.

The tray is made of half-inch wood, for lightness; it is five inches longer and one inch wider inside than the outside measurement of the hive. On the sides and one end of the bottom board are nailed pieces of half-inch stuff, projecting three and a-half inches above it, with two 3 x ½in. battens nailed on the bottom, and also a leather strap tacked on underneath, by which to hold the tray while shaking in the swarm. Four fillets, 1½in. square by 3in., are nailed inside the tray—one at each corner—for the hive to rest upon when placing it over the bees.

The method of using the tray is as follows:—When a swarm has settled on a branch that can be shaken, take the tray in the left hand by the strap and hold it close under the swarm, give the branch a smart shake or two with the right hand, which will cause all the bees to fall into the tray. Place it on the ground immediately and put the hive over the bees, resting it on the four fillets inside the tray. Cover all up except the front with a sheet, and shade from the sun. The front being open, any bees that are outside will readily find access to the hive, and in a short time the whole of the bees will be up amongst the combs, when the hive may be placed on its permanent stand. When a swarm settles on a limb or anything that cannot be shaken, I hold the tray as near below it as possible, and with a turkey or goose's feather brush the bees into it, and place it on the ground as before. I have found the tray so useful and so easily managed that, were I compelled to do without it, I would give up frame hives, through the bother and trouble of getting the bees into them.

W. H. J. Smith.

Kyneton, Victoria.

[If our correspondent had followed the instructions given in the *Illustrated N.Z. Bee Manual* he would have found no difficulty in hiving swarms.—Ed.]

MOVING BEES.

Sir,—As there may be other bee-keepers who, like myself, may have occasion at some time to move their bees, a knowledge of my first experience, perhaps, may be of service to them. Some short time ago I removed from Coromandel to Auckland and brought my bees (ten colonies in Langstroth hives) with me. The way I packed them was as follows:—I securely wedged the frames by putting pieces of thin battens between them, instead of nailing them as you suggested in your letter. I found this method to answer equally as well, and is less trouble. I had lots of packing-case zinc, which I cut up to the proper size to tack over the tops and bottoms of the hives. I then punched it full of small holes; the zinc being soft and thin, this job does not take long. This perforated zinc I tacked over the top and bottom of each hive, doing away, of course, with the bottom boards and covers.

I was unfortunate in having a rough passage by steamer from Coromandel, and it rained heavily for two days after I got the bees here. So that it was three days before I could unpack them. I then found that the new combs that were heavily laden with honey in four of the largest colonies had broken down and smothered large quantities of bees. I drove out the bees from one of these hives and arranged the combs again; but, owing to their being heavy with honey and brood, the cold weather coming on, and robber bees being troublesome, I thought it best to let the others remain as they are until the spring. I notice the bees of the injured hives bringing in pollen every fine day—there being plenty on the acacias just now—so I suppose the queens are all right and breeding a little. I am feeding them sparingly. I don't know that I shall have room for or time to look after any more than the ten colonies, if I have I should like to get some Ligurian queens.

James Langford.

Parnell, June 25th, 1883.

EFFECTS OF BEE-STINGS.

In the *Journal* for December, "E. H. B." wishes to know the treatment to be adopted when a man or woman gets into a state of coma from a bee-sting, which, of course, will depend on the cause of the coma.

The bee-poison, when taken into the system, gives rise to a form of blood poisoning, but as the amount of poison even from twenty stings is so small, the symptoms, except in those cases where the person stung is in a bad state of health, never become serious.

Death has resulted from persons having been stung inside the mouth, or the throat, by eating fruit, honey, &c., in which a bee has been overlooked, and the swelling caused by the bee-poison, closing up the windpipe, has killed the patient by suffocation.

In these cases the only remedy would be to make an artificial opening in the windpipe, an operation difficult even for an experienced surgeon.

In those cases where death is imminent from "shock," the best remedies would be stimulants, either in the form of brandy, whisky, &c., sal-volatile internally, or by injection under the skin, strong coffee or tea, together with galvanism, and hot cloths applied to the head and chest.

The after treatment would consist in building up the patient's strength by means of stimulants, strong beef-tea and soups, milk and eggs, with quinine, bark, and mineral acids.—George Walker, L.R.C.P., Wimbledon, 22nd Dec., 1882.—*British Bee Journal.*

A correspondent asks: "What is the difference between swarm of bees and a sewing bee?" Answer. None as far as buzzing is concerned.

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(For the N. Z. and A. Bee Journal.)

BAYVIEW APIARY, KATIKATI.

SEASON 1882-83.

A SHORT description of the locality may be useful in order, when compared with other cases, to assist in leading to a conclusion upon the question—How are the results of an apiary affected by its general position, and the particular circumstances of its neighbourhood?

It is on the East Coast, about half a degree south of Auckland, close to the Tauranga-Thames road, and midway between the Tahawai and Tuapiro rivers, which are crossed by that line. The surface of the neighbouring lands is undulating, lying between a mountain range (extention of the Coromandel range) on the west, and the shore of the inlet of the sea which extends from Katikati Heads to Tauranga on the east side. The immediate position is at the bottom of a gully which runs from S.W. to N.E., is closed in and well sheltered at the S.W. end; and the slopes and bottom of which, about four acres, are enclosed for garden and orchard purposes. The apiary is near the middle of this enclosure; a small stream runs through it from a spring, which supplies sufficient water at all times of the year. The place is laid out for 100 hives or more, the sloping ground being formed into small terraces, at least six feet wide and rising a foot or two one above the other, so that the floorboard of the second row of hives stands about level with the roofs of the first row. The hives are six or seven feet apart in each row, and those in the next upper row are, of course, placed so as to face the centre of the spaces in the lower row; there is thus a free flight to the entrance of every hive, and there is ample space in each terrace behind the row for a barrow road and to admit of manipulating the hives in front without injuriously interfering with those behind. In the garden and orchard there are already about 200 young fruit trees of all sorts, a great quantity of flowers and flowering shrubs, and about the place, within a short distance from the apiary, a number of ornamental and shelter trees, amongst the latter, acacias, and blue and red gums. In the immediate neighbourhood there are grazing farms which afford abundance of white clover in the season. The nearest bush on the side of the range is about a mile distant, and between one and two miles there is plenty of bush, for the greater part rewarewa and manuka. Within a radius of a mile from the apiary there are, besides, four or five houses with tolerably large flower and fruit gardens or orchards.

We commenced the season with fifteen colonies in all, of which, however, only four were in thorough working order and in strong condition; two were moderately strong, six weak, and three *very* weak. Most of these latter nine had only been artifically formed near the close of the previous season by uniting small swarms, bees transferred or driven out of old box-hives, etc., and had not got into sufficiently strong condition before the winter. Seven of them had to be united with new swarms in October and November before they began to do any good, so that we can only consider we really commenced the season with *eight* colonies, and that only half of these were quite as they should have been.

In November, three colonies were added, formed of strong swarms obtained from the bush and elsewhere; and in November, December, and January, eleven new ones were formed with swarms from the apiary, so that in January, '83, the number of working hives was 29, besides two queen-rearing boxes and a small observatory hive. The swarms were all hived upon frames, with comb-foundation, which, as well as the frames in nearly all, the supers had of course to be worked out by the bees in the first instance.

The quantity of honey taken was 1718lbs., of which 1592 were extracted, and 126 comb-honey in section boxes.

Two hives have since been united, and we go into "winter quarters" with 28 colonies, of which 25 have now in reserve the supers, with frames of fully-worked comb.

If we assume that the apiary consisted of 18 colonies (including the 3 extra swarms) in November, '82, the result given is an average production of 95lbs. per colony, and an increase from 18 to 28.

Taking the 8 which were actually at work before October, I find that they, with their swarms, gave 958lbs., or an average of 120lbs., and increased from 8 to 14.

The 4 strong colonies, with their swarms, gave 663lbs., or 166lbs. for each colony, and increased from 4 to 7.

The largest production from one colony and one hive (did not swarm) was 184lbs.; the largest from one colony, with its swarm, 180lbs.

In order to show the advantage of a *heavy* swarm hived pretty early in the season, I may mention that the first swarm of bush bees weighed 10lbs. It was hived on the 31st October on ten frames of foundation. On 5th November all were worked out; extracted 8lbs, of honey, and put on supers, with ten more frames of foundation. Up to 30th November we had already extracted 50lbs. The bees were then forming queen cells; took these out and added a third story, with ten more frames of foundation *between* the original hive and its super. Up to 28th December, had extracted 98lbs.; and up to 22nd January, 150lbs. in all. Thus this swarm, within twelve weeks from being first hived, had given 150lbs. of surplus honey, besides working out 30 frames of comb-foundation. It also gave off a swarm (which was evidently a heavy one) on New Year's Day, which was unfortunately lost, as there was no one near the apiary at the time.

June, 1883. T. J. M.

APICULTURE IN THE WESTPORT DISTRICT, N.Z.

SIR,—I purpose giving, through your columns, for the information of your readers, a general report of bee-keeping in the Westport district. In doing so, I will state the names of various apiaries I visited, and give a short account of each.

I will commence with the Westport Apiary, the proprietor of which is a progressive apiarist, and, consequently,

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has all his bees in moveable-comb hives. His swarms are supplied with that greatest of modern apistical inventions, artificial comb foundation; and he is also using all the latest appliances in connection with advanced bee-culture. On a former visit to this apiary some years since, I noticed that the hives were formed of square boxes, having small windows at back and front. These boxes were arranged for working bell-glasses on top, which held, when full, from six to nine pounds of honey. This, with the exception of driving the bees at the end of the season, was the proprietor's only method of taking his surplus. At that time he—the proprietor—considered his bees done remarkably well, but he now tells me he can get as much honey from one of his present hives, viz., "Hopkins's Langstroth," as from six under the old principle, even with the best management. He has been very successful during the past season, and expects to do much better next, now that he has had some little experience of the working of the modern system. It is a great loss to the bee-keeping interests of this district that the owner of this apiary has, owing to his business, so little spare time to devote to bee-culture.

I next visited the Sergeant's Hill Apiary. This is very nicely situated at a new farmstead, where there has not been much clearing done in the neighbourhood; it is a thickly-timbered locality, and I should imagine, a capital place for bees. Last season the owner started with four hives, two on the old, and two on the new system. The apiary now numbers ten stocks, all in "Hopkins's Langstroth" hives. The result of last season's work was 300lbs of surplus honey and increase of from four to ten hives. The owner expects to do much better on an average next season, as his bees are now in splendid condition. He is using all the latest appliances in bee-culture, including the honey extractor, which he says is a grand invention. Of this apiary I have great hopes, and have no doubt, in a short time I will be able to give you a very good account of it.

The Snag Falls Apiary comes next in order. Of this bee-keeper I cannot say much. When I paid him a visit some six years since he had twenty-four stocks in square boxes; but they have now dwindled down to six, and still under the old system.

I now come to another apiary which I will not name. It is composed of some twenty-five boxes of bees. The boxes are of different sizes, most of them having frames, the surplus honey being taken away in supers. On my visit to this apiary a few days ago, I was surprised to see how the bees were neglected. I noticed a number of boxes covered with half rotten sacks, and some of them anything but upright, so that it would require but little wind to blow them over; there was also a great deal of wax strewn about. I would not be at all surprised to hear that a number of these stocks had died before spring sets in.

The next to receive a visit from your correspondent was the Blow Hole Apiary. This is situated in an orchard, and I should think a very fair place, but rather near the sea. The proprietor of this apiary has made rapid strides for the time he has been cultivating bees, as two years ago he had but one stock, and now has nine—four in "Hopkins' Langstroth" and five in common boxes. He is using artificial comb-foundation, and if he keeps on as he is doing at present, will soon have a profitable bee farm. The owner of this apiary kept bees in Canada, so that he is not quite a novice at the work. There are a good many cottagers about this district who keep one or two hives of bees, but most of them are in the old style of boxes. Advanced bee-culture is but in its infancy here, and I have no doubt, with the aid of your Journal and the example already set by a few progressive bee-keepers, that scientific bee-keeping will become a very popular industry in this district within the next few years.

J. B.

Westport, June 2nd, 1883.

We are in receipt of several communications from our correspondents, which arrived too late to be inserted in this issue, but will be published in our next.

QUERIES AND REPLIES.

We shall from time to time give replies through this department to questions pertaining to bee-culture, propounded by our subscribers. We would ask our correspondents to be as concise as possible, and to number their questions 1, 2, 3, and so on.

QUERY.—*Wired Frames, Honey Racks, Ligurians, &c.*—1. I am wiring all my frames for brood and extracting. Do you think this a good plan? 2. What is your experience in regard to the carriage of comb honey in 1lb. sections. Could it be sent to England by direct steamer with any probability of its arriving safely, packed in cases holding say 4 dozen? A London dealer sent me a circular describing an outer case provided with rubber balls on which the inner case containing the honey *rested*, but the price of the article was rather a fancy one. 3. I propose adopting the following simple plan for turning out comb honey, and will be glad to know how you think it will work. Instead of the broad frame and tin separator, I nail a narrow strip across the sides of the case and fasten seven battens to the lower side of it, along which I lay the section boxes, and between each row slip in a wooden separator, the lower edge of which rests on the cross strip. This is a very simple sort of rack, and I see no reason why it should not do as well as a more complicated and expensive contrivance. 4. In a district teeming with bees, would there be any use in introducing Ligurians? Would they not very soon revert to the black type?—G. Stevenson, Ormond Apiary, Gisborne.

REPLY.—1. We have not yet used any wired frames, so cannot speak from experience, but believe from reports we have read that thin wire, when properly inserted in the septum of the comb, strengthens it and prevents all sagging or stretching. Though with regard to sagging we have had very little to complain of on that score, without the aid of wires, and we cannot help thinking that the need of wire was brought about in the first place by the use of adulterated wax in making comb foundation. When a heavy swarm is put into a hive in warm weather on sheets of foundation in all the frames, the hive should be shaded for a few days from the direct rays of the sun, and plenty of ventilation allowed; this will prevent the comb stretching to any appreciable extent. 2. Our experience does not extend farther than sending crates of comb honey from the Thames and Matamata to Auckland, which has always arrived without mishap. We believe it could be sent to England in good order by direct steamer with care, providing it could be placed in a room kept at an even temperature of about 50 degrees Fahr. We intend to try a small shipment during the coming season. We would advise you to use cases or crates holding two dozen 1lb. sections, instead of four dozen, as they are much easier handled; placing each two crates into a skeleton case so that the glass of the crates while being protected would allow of the contents being seen. We have seen an engraving of the

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case you mention with the rubber balls, but they would be rather expensive to obtain here. 3. We experimented with comb honey racks some four or five seasons ago, but soon gave them up. Our objection to them was the difficulty—as compared with the frame system—in "tiering up," which is generally required in raising comb honey, and the liability to kill a great many bees when changing the sections by crushing them on the bars that support the sections. 4. Yes, it would be of use to introduce Ligurian bees into a district such as you mention. Is this not being done every season? It might probably take you two or three seasons before you could breed sufficient pure queens to stock the whole of your apiary. The first batch of queens you raised in all likelihood would be mated with black drones; these queens would produce hybrid workers but *pure* drones, thus giving you a greater chance of purely fertilized queens out of your second batch, and so on.

QUERY.—*Single-comb Honey Extractor.*—I have purchased an extractor—Fig. 16 in your *Manual*—from Bagnall Bros., Turua, Thames, and I should feel very much obliged to you if you could give me any further information how to use it. I have worked it according to the instructions laid down in the *Manual*, but I am sorry to say I could do nothing with it. It seems to me that the meshes of the wire netting against which the comb rests are too small.—John Collins, Tuakau.

REPLY.—We judge from the fact of you mentioning the wire netting that you have caused the extractor to revolve at too great a speed, thereby crushing the ends of the cells containing the honey against the netting, and so obstructing the flow. When commencing to extract—especially if the combs are new and heavy with honey—the extractor should be turned slowly until the comb is lightened a little, the comb then reversed and the other side treated in the same manner. Some kinds of honey, such as flax and some of the bush honey, is most difficult to extract, and can only be got out of very old tough combs without breaking them.

QUERY.—*Price list of Hives, &c.*—I have been much interested in your *Bee Manual*, and have been working to some extent on your lines this season. I shall be obliged if you will forward a price list for my information. Sir W. Fox informs me that you only supply the foundation comb yourself now; but perhaps you can tell me where I can procure the other requisites. If you can give me an idea of the cost of freight and packing also, I shall be indebted to you.—Thos. Awdry, Tadcroft, Wanganui.

REPLY.—Messrs Bagnall Bros. & Co., whose advertisement appears on another page, is the only firm that we are aware of at present in N.Z. who issue a price list of hives, &c. Write to them; they will give you all particulars. We have forwarded our list.

QUERY.—*Hives, Swarms Absconding, &c.*—Sir, I have been reading with great interest your *Bee Manual*, but am prevented by difficulties at the very outset from carrying out its instructions, and therefore trust that you will excuse my troubling you on the subject. Last year I bought of Mr Knight, of Gisborne, two swarms of common bees, and afterwards got from Canterbury a bar-frame hive, I imagine like those which you recommend, but that it has no upper storey. The cost of these, including freight, &c., &c., was between £4 and £5; the return which they yielded was 15lbs. of honey, got from a common box in which I hived a late swarm. Mr Knight's hives have supers containing eight glazed boxes, which in his apiary the bees fill rapidly, but in which here they did not begin to build comb till the season was nearly over, and then very slowly. Three swarms which I took in boxes and then transferred to the bar-frame hive deserted it, though one swarm had built several blocks of comb in it. A gentleman told me that a friend of his induces swarms to remain by putting into the hive a bar filled with honey; but I am met by the difficulty that I have not such a bar to start with. My only chance seems to be to get a bar-frame hive in which the bees are already established, and as you speak of sending away honey, it occurred to me as possible that you might also sell bees. If so, will you kindly inform me at your earliest convenience what would be the cost of a swarm, in a Langstroth box with an upper storey, whether there is any way of sending them safely here, and what the carriage would come to. I should prefer Italian bees. but that I am told they injure fruit, which would be a serious drawback as we are having a large orchard planted. If therefore they do pierce fruit, I must content myself with the ordinary black bees; or if the two different kinds would be likely to fight? I should also esteem it a great favour if you would tell me whether there is any plan by which I could get the bees I have to work in the supers in Mr Knight's hives; and, supposing that I ever get sufficient honey to sell, where I should find a market for it at the prices you quote? I do not think it would be at Napier, as nearly all the small settlers keep bees (on the gin case and sulphur pit plan) and sell the honey at 6d. per lb. I trust that you will forgive my trespassing thus on your time, when I add that I am not taking up apiculture as a mere hobby, but as a means of livelihood, in which, if only I get fairly started, I might hope to succeed, as other ladies seem to have done. —H. L. Murdoch, Hastings, Napier.

REPLY.—You certainly appear to have had a very poor commencement with your bees. In the first place, we consider the cost and freight of your hives was excessive, especially as they were only one storey hives. You should get two double-storey hives, fitted with sections for comb honey and comb foundation complete, landed in Napier for much less than £4. We could not say why your bees did not begin to build comb before the season was nearly over, without further particulars; your colonies may have been considerably weakened owing to the transportation from Gisborne, or, as you speak of having taken three swarms, they may have been weakened by over-swarming; in any case the weaker the colony the less comb would be built in a given time. We cannot account for your swarms leaving the hive unless there was something distasteful to the bees about it; we have no difficulty with our swarms in getting them to remain after hiving them; look up your "*Bee Manual.*" A frame of honey given to a swarm is very good if you wish to feed it a little to start with, but a frame of brood is a better inducement for the bees to remain. We have sent you a price list of Italian bees. Your fears with regard to bees injuring your fruit are unfounded. Bees *cannot* puncture fruit, nor do they go near fruit until some other insect has made an opening for them. We could not advise you how to get the bees into the supers of Mr Knight's hives, as we do not know what kind of a hive it is; possibly the gentleman could tell you himself. We would strongly advise you to use the "Langstroth" hive, and work according to the directions given in the "*Manual.*" You will find the market quotations in another column; we consider 6d. per lb. for sulphured honey to be an extra good price. We shall be happy to assist you all that lays in our power in your undertaking, and advise you to persevere, and hope that many other ladies will follow your example in taking to bee-keeping for a livelihood.

SIR JOHN LUBBOCK, who has made a special study on bees, says they can distinguish colours, and that they have a decided preference for blue. He reached this conclusion by placing honey on pieces of paper of different colors and depositing the papers on a lawn where the bees came for food.

Subscriptions for the BEE JOURNAL may be commence with any month of the year.

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FROM OUR CONTEMPORIES.

BEES AND HONEY IN ANCIENT TIMES.

In reprinting the following article we have much pleasure in complying with the request of the editor of the *American Bee Journal*, who says:—"We have prepared the first article in this paper with especial reference to its adaptability for general reading, and respectfully invite the editors of our exchanges and others to copy it into their papers."

In the books of antiquity, honey is mentioned as one of the necessaries of life—man's first source of nourishment. Aye, and are we not informed that when "the morning stars sang together" over the pristine beauty of a new-born world, that under the bright smile of Heaven, Adam and his happy spouse were presented with a glorious home in an enchanting garden filled with "supernal fruits and flowers" of Heaven's own planting —nurtured and watched by hosts of angelic attendants, who had made that Eden-home a beautiful Paradise? There "the beasts of the field and fowls of the air" dwelled together in perfect harmony, under sun-lit skies; and among the beautiful bowers of that holy retreat, Eden's feathered songsters rapturously joined in "the swelling chorus."

There, too, revelling in the precious nectar yielded from the bloom of glory-clad hills, shrubs and flowers, was "the little busy bee," with its joyous hum and rapid flight—gathering the plenteous sweetness for the tiny but numerous family about to spring into existence, at its little home! Ever did it flit from leaf to leaf and flower to flower, gathering the honeyed treasures, that its "stores" may be abundant for generations yet unborn—when winter's sable-shades might settle down upon the earth, visiting it with cold and storm, chilling the "little pets" by its frozen breath or fiercer blast!

No historian has transmitted to our day a description of the rude hive provided for the bees that Noah carried into the ark, nor are we informed whether Abraham's bees were kept in log-gums or box-hives, but it *is* recorded that the land where Abraham dwelled — Canaan — was one "flowing with milk and honey;" and when the old Patriarch, because of the famine that prevailed there, sent his sons to Egypt to buy corn, he sent as a present to the Egyptian ruler some of Canaan's famous honey. We may well conclude that Canaan's honey was then as famous as in subsequent ages was the honey from Mount Hymettus in Greece.

In later years, Abraham's offspring journeyed through the deserts of Arabia, and in order to sustain them there, God gave them manna from Heaven to eat; they said that "the taste of it was like wafers made with honey." When the Amorites came out of the mountains of Sier against the children of Israel, "they chased them like angry bees." In the Mosaic law we find many statutes regulating the ownership of bees. When Jonathan was engaged in battle with the Philistines and became tired and faint, he partook of honey, and was greatly refreshed. David and his army were provisioned in Gilead, and honey was one of the luxuries enumerated. The Jews placed honey before their guests as a sign of welcome, giving them the greatest luxuries that the land produced. Jeroboam sent his queen with presents to Adhehaja the Prophet, including honey. In the tythes of the Jewish Priesthood, honey is enumerated. Job signified the plenteousness of honey in the land, by speaking of "brooks of honey." Solomon relished Canaan's delicious honey, and volunteered this advice: "My son eat thou honey; because it is good." Isaiah mentions "the bee that is in the land of Assyria," and declares that bees were so plenty that "butter and honey shall every one eat that is left in the land."

The earliest mention of honey as an article of commerce, is, that the Jews were engaged in trading it at Tyre, that old and honored mart of trade in Phœnicia. Sirach, who lived about the time of the re-building of the Temple of Jerusalem, speaking of the necessaries of life, mentions honey, with flour and milk. Solon, in the year 600, B. C., enacted a law, requiring that bee-hives in cultivated fields must be 300 feet apart. Homer, Herodotus, Aristotle, Cato, Varro, Virgil, Pliny, Columella, and other ancient sages, composed poems, extolling the activity, skill, and economy of bees. The celebrated Slician apiarist, Aristomachus, of Solus, with 58 years of experience in bee-keeping, wrote on the subject of bees and honey, some 500 years, B. C.,—but that work is lost to us. The Persians, Grecians, and Romans, used honey quite extensively as an article of diet; they also used it largely in preparing their food, and by it most of their beverages were sweetened.

More than 3000 years ago, it is said that Samson proposed this riddle to the Philistines: "Out of the eater came forth meat; and out of the strong came forth sweetness," and gave them seven days to expound it. They are said to have been unable to explain it, and by threats of burning his wife and all her kindred, they extorted the explanation from her, as follows: "What is sweeter than honey? And what is stronger than a lion?"

Samson was not only a riddle-maker but was himself a riddle. It is said that while he was quietly walking, unarmed, in the vineyards at Timnath, "a young lion roared against him," and "he rent him as he would have rent a kid. "After a while, he turned aside to see the carcass of the lion, and, behold, there was a swarm of bees and honey in the carcass of the lion." Thereupon we are told that he commenced to regale himself on the honey, and gave of it to "his father and mother, and they did eat." This was the key to his riddle.

Of course it was very singular that he should have slain a lion in the prime of his vigor, and yet more strange that a swarm of bees should have taken possession of the carcass.

This remarkable story of ancient times is full of enigmas. In explanation of some of these, Oedman remarks as follows:

> The lion which he slew had been dead some little time before the bees took up their abode in the carcass, for it is expressely stated that 'after a time' he returned and saw the bees and the honey in the lion's carcass; so that if any one here represents to himself a corrupt and putrid carcass, the occurence ceases to have any true similitude, for it is well known that in those countries, at certain seasons of the year, the heat will in the course of 24 hours, so completely dry up the moisture of the dead camels, that without undergoing decomposition, their bodies will long remain like mummies, unaltered, and entirely free from offensive odour.

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"In that country, it is said, that with wildbeasts, birds, and insects, coupled with the dry heat, a dead body is soon cleansed from all corruption, and the bones are clean and white, and a swarm of bees may readily have used such a carcass for a hive. We do not propose to attempt to clear the story of all difficulties, but will draw some lessons from Samson's very singular adventure.

In those days, among the Hebrews, Romans, and Greeks, honey appears to have been about the only sweet, and was used in place of sugar, then unknown. Honey was then considered among the necessaries of life. It is true that Pliny, Galen, and some other authors, allude to *saccanon* as a white chrystallized gum obtained from an Indian reed, which was sometimes used as a medicine, and was "brought from Rome, in pieces about the size of a nut." The Arabians were first to bring sugar to notice, after they had pushed their victorious arms into the Western regions.

The first writers by whom sugar, as such, is mentioned, says an author, lived in the 12th century, in the time of the crusades. Albert of Aix states that the soldiery, when near Tripoli, in Syria, pulled up the sweet stalks of a reed grown there abundantly in the fields and called *zucra*. Its wholesome juice refreshed them, and was so grateful to their taste that they were incessantly sucking it. This valuable plant was diligently cultivated every year. When ripe for harvest, the natives crushed the reeds in a mortar, pressed out the juice, and preserved it in vessels till it became thick and granulated, and resembled snow or salt in its whiteness.

In the year 1306, when Sanudo compiled his Mysteries of the Crusaders, the sugar cane was not yet cultivated in Sicily, though it was then already grown extensively in the Morea, in Cyprus, and Rhodes. A century later it had become so common in the island of Sicily, that the Infante Don Henry, of Portugal, readily obtained there a supply of plants for its introduction in Madeira. From here and from the Canaries it was carried to America, where it has been so extensively cultivated that the European plantations were speedily abandoned, and America now supplies with sugar not only nearly all Europe, but a large portion of Asia also. The sugar cane was first brought to the Western Hemisphere by the Spaniards.

Another writer remarks as follows on the consumption of honey:

The consumption of honey and wax, and consequently the demand for them, was so great among the Romans that the production thereof was an object of the highest importance in rural economy; and no one was deemed qualified to manage a farm who did not thoroughly understand bee-culture as then practised. This was to be made an essential source of revenue to the proprietor, for the Romans were a practical people, who, according to Columella, looked to an increase of annual income in their pursuits more than to a mere gratification of taste. But the natural supply of honey in Italy was insufficient for the home demand, and large quantities were imported from Africa, Crete, and Sicily, the superior quality of which induced the Italian bee-keepers to send the finest and most aromatic of their own to market under the name of Sicilian and Cretan honey, as we are informed by Varro. That of inferior quality, as we learn from Pliny, they were in the habit of colouring and sweetening by an admixture of other substances, and strengthening by the addition of various kinds of wine. An annual tribute of honey and wax was imposed on conquered provinces and territory, as on Pontus and Corsica, and the hope of obtaining additional supplies, it is supposed, was among the inducements for their invasions of Germany.

A large amount of honey was required by the religious ceremonies and worships of the people. "Nothing is sweeter than honey," says Varro, "grateful to Gods and men. It is used on the altars." It was particularly prominent among the sacrifices of the peasantry. The numerous rural deities, whose favour and protection they invoked, and to whose service they were attached, claimed a portion not only of the products of their gardens, orchards, and fields, but of their flocks and herds, and of their apiaries. Also at the feasts of the Gods, described by Ovid, which required costly aliments and precious wines, the delicious honey-cake was never wanting. These were composed of meal, honey, and oil, and had to be equal in number to the years attained by the offerer. For the domestic worship also of their household deities—the *Penates*—honey, "the gift of the Gods," was indispensable; and it constituted a large item at the vernal consecration—ambarvalia—of their fields in April, as well as at the annual thanksgiving in October, and likewise at the special worship of Ceres in November, who was regarded as the "flock increaser," and the "honey dispenser," and who, by her union with the rain-God Zeus, caused fruitful seasons. Her priestesses were called "bees," because honey was the first food of the infant Dionysus, the son of Bacchus, whom Ceres bore in her arms, as Isis carried Horus; and she was the instructor of Aristæus in bee-culture. Bacchas, too, demanded a share, as the "discoverer of honey," the "admirer of all sweetness," and the "decorator of the blooming meadows."

Every sacrificial victim offered to the higher Gods was sprinkled with milk, wine, and honey, and large quantities of the latter were required in the solemn celebration of their mysteries, and in the obsequies of the dead. The later Romans poured honey in the grave of the deceased. It was with them a symbol of death. It will hence readily be inferred that their religious ceremonies involved a large consumption of honey, and that this must have induced increased attention to bee-culture. But the quantity used in domestic economy was still greater, as they were unacquainted with the sugar now in common use. What they called *saccharum* was a very different article, obtained from Arabia and India. It was, as we learn from Pliny, used only medicinally. Honey was thus the only sweetening employed by them for meat and drink, and was as indispensable in their households as sugar is now in our families.

In view of the death-dealing adulteration of sweets in our day, is it not our duty to imitate Samson, who, when he had found the God-given pure sweet—honey—sought out his relatives and *took some of it to them to eat?*

Thousands and tens of thousands of children are dying all around us, who, because their ever-developing nature demands sweetness, crave and eagerly demolish the adulterated "candies" and "syrups" of modern times. If these could be fed on honey, instead, they would develop and grow up into healthy men and women.

[The remainder of the article was given under the head of "Honey as an Article of Food" in our last issue.—Ed.]

FERTILIZATION IN CONFINEMENT.

We are frequently asked, particularly by persons just entering on the "bee-business," for the *modus operandi* of fertilizing queens in confinement. Many methods have been proposed by different experimentors ever since the fact that it could be accomplished was ascertained by Mrs. Tupper about 15 years ago. A vast number of experiments have been made since that time both in this country and in Europe, while, if we may credit the statements of well-known and reliable apiarists, a few have succeeded, by far the larger number have utterly failed. After spending

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considerable time and money in apparatus, and losing many valuable young queens, they have quit their experiments in disgust, and pronounced the thing impossible. To give all the reported methods adopted by which to accomplish the desired end, would fill a small volume, as they vary from the simple and sensible to the most complex and foolish, and most of them show a wonderful lack of knowledge of the nature and habits of honey bees, so necessary in experiments of this kind. Among those who have succeeded to any great extent, none have used simpler methods than Prof. Hasbrouck. He takes a new barrel, cuts a round hole about six inches in diameter in the centre of one end, the other end of the barrel being open. A glass is fitted in this hole so as to come even with the inside of the head of the barrel and leave no resting place for the queen or drones. The barrel is set in the sun light, but with a black cloth over the glass so as to render the inside of the barrel perfectly dark. The queen should be three or four days old, and be caught without unduly exciting or *touching* her with the hand. The drones should be full grown, and at least two weeks old, and should not be touched with the hand. Introduce the wire vessel containing the queen and drones under the barrel at the bottom, and at once remove the black cloth from the glass. The bright light will at once cause the bees to fly to it and in the act of doing so the fertilization is said to take place, which is known by the altered appearance of the queen, and by finding one of the drones mutilated. The professor has succeeded many times and also frequently failed, but is still working away, and we trust in due time he will have the apparatus and also all the conditions of success, so narrowed down that with care any apiarist, not too wise to implicitly follow his directions, will be able to turn this at present imperfectly understood subject to practical account, when it will be given in all its details in the *Bee-Keepers' Magazine.* In the meantime let no costly experiments be made unless you know yourself to be competent to take hold of the matter in a scientific manner, and have money and stock enough to afford to stand some disappointments and loss.—*Bee Keepers' Magazine.*

DO BEES INJURE FRUIT?

We have long tried to believe that they do not, but the following august authority travelling the rounds of the Press, is conclusive evidence :—

We once told Mr. Frederick Wilhelm Whokendemffeschauferponsky, a whole-souled Dutchman of our acquaintance, that bees did not injure fruit at all, when he pitched in and said he knew better, and gave the best argument we ever heard, that bees do injure fruit in the following words :

"Vounce a long vile ago, ven I first to dis country gome, I vent into mine abble orchard to glime a bear dree to kit some beaches to make mine vrow a blumbudding mit ; und ven I kits avay up on de tobbermost limbs, a hole lot of pees, pees vot gome for honey gitten—dwo, dree five thousand of 'em gome ven I vas on de highermost pranches, und tey schting me all over so pad as never vas, und right pefore mine vace, too, und I not know vere I am, so I vall town from de lowermost limbs vay so high up, mit von leg on both sides of de bicket vence, und like to stove my outsides in. Vat you say, hey! pees no steal de fruit, ven I ketch 'em at it?"

We do not like to gainsay or resist such positive, convincing facts. We think the entire question may now rest without a quibble on this presentation of the case ; it is so pure in language, thought and style, that it should be accepted as a model.—*American Bee Journal.*

A little boy quietly watched a bee crawling on his hand, till it stopped and stung him, when he sobbed : "I didn't mind it's walking about, but when it sat down it hurt awful."

HONEY MARKETS.

Auckland, August 1st, 1883.

The demand for extracted honey is very good. Up to the present California has supplied the market, but the superiority of the local article has completely closed up the importation. Prices at present are—for 1lb. tins, wholesale, 8s 3d to 8s 6d per doz. ; retail, 10d to 1s per lb.

Auckland Agricultural and Mercantile Co., Limited.

ENGLAND.

English Honey :—Comb, in sections, none on offer.
Extracted in bulk :—Scarce ; price, from 10d to 1s.
English Wax :—1s 4d to 1s 8d.
—*British Bee Journal*, May 1st, 1883.

AMERICA.

New York, April 27, 1883.

Honey.—Permit us to quote honey and wax as follows :—

Best clover, in 1lb sections (no glass), per lb.		22 @ 23
" " 2lb " (glassed) "		18 @ 20
Fair " 1 and 2lb sections "		17 @ 18
Best buckwheat, in 1lb sections (no glass), "		16 @ 17
" " 2lb " (glassed) "		14 @ 15
" white clover extracted in small bbls "		10 @ 11½
" buckwheat " " " "		8 @ 9

Beeswax—We are selling prime yellow at 40 and 42c per lb. No change in prices on honey since last issue.

H. K. & F. B. Thurber & Co.
—*Gleanings*, June 1st, 1883.

San Francisco.

Honey—Stocks and the demand are both light. More or less difficulty would be experienced in filling a large order for a straight lot.

White comb, 14 @ 17c. ; dark to good, 16 @ 13c. ; extracted, choice to extra white, 8½ @ 9½c. ; dark and candied, 5 @ 7½c.

Beeswax—Wholesale, 27 @ 28c.

Stearns & Smith, 423, Front-street.
—*American Bee Journal*, May 28th, 1883.

OUR HONEY IMPORTS.

The value of honey imported into the United Kingdom for the month of March, 1883, was £1535.

[From a private return sent by the Principal of the Statistical Office to E. H Bellairs, Esq., Hon. Sec. Hants B.K.A.]—*British Bee Journal*, May 1st, 1883.

SPECIAL NOTICES.

Query and Reply Department.—Correspondence for this department should reach the editor not later than the 15th of each month, when replies are required in the next issue.

Advertising Department.—Advertisements for the next issue should reach the publisher by the 24th of each month.

Subscriptions, &c.—P.O. orders for Subscriptions, Advertisements, &c., to be made payable at Chief P.O., Auckland, and drawn in favour of Mr J. C. Firth.

Correspondence for publication may be sent at book post rates, *i.e.*, one penny for every two ounces, providing the book post regulations are complied with, and the words "Press Manuscript" are written on outside of cover.

Our Correspondents will oblige by writing articles for publication on one side of the sheet only.

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Quarter column... ...	0	8	0	Quarter column ...	0	17	6
Half column	0	15	0				
Whole column	1	5	0				

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THE NEW ZEALAND AND AUSTRALIAN

BEE JOURNAL.

Devoted exclusively to Advanced Bee Culture.

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CALENDAR.—SEPTEMBER.

SHOULD the weather prove favourable a considerable amount of honey will be gathered from willows, early flowering peaches, and other trees now coming into blossom. Honey from these sources, however, cannot always be depended upon, as the weather is often very stormy at this time of the year, in which case the bees cannot collect it. All kinds of willows are valuable honey trees. At the Thames, where we were formerly living, there were a large number growing in the neighbourhood of our apiary, and in some seasons, when fine weather prevailed during the time they were in blossom, we have both been astonished and delighted at the large amount of honey that has been stored from this source. We would, therefore, strongly recommend the planting of these trees where practicable.

Towards the middle and latter parts of the month, apple, pear, and other fruit trees will follow, as well as some native trees, hawthorn, dandelions, &c., keeping up a succession until clover blossoms. As breeding in strong colonies will now be increasing rapidly, care must be taken to keep them snugly covered. Everything should now be prepared for the approaching season, so that when it does come the bee-keeper will be ready for it. Those who contemplate starting an apiary this Spring should now arrange with some neighbouring bee-keeper for a supply of early swarms, and procure the hives ready to receive them. The latter part of this month and the beginning of next will be the best time to transfer bees and comb from boxes to moveable-comb hives.

SPRING MANAGEMENT.—The success of an apiary for the season depends in a great measure, if not entirely, on its management in early Spring. In order to have the full advantage of the honey season the hives should be crowded with bees at the commencement of the main harvest. If the colonies are weak in population at this time, a considerable portion of the season will have passed away before they are in a condition to store surplus honey. It should always be borne in mind that it is only strong colonies that are profitable.

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In most districts the main crop of honey is obtained from white clover. In this locality (Waikato) it commences to blossom in ordinary seasons about the end of the second or third week of October. To ensure crowded hives at this time the bee-keeper will need to commence working for this object some six or eight weeks earlier, say at the beginning of September. The colonies should then all be examined, and the state of each noted for future reference. Any that are weak and have but little brood should be crowded on to as few frames as possible by placing a division board on each side the cluster, first seeing, of course, that they have sufficient food, while those that are strong and have brood in three or more frames may have the outside frames containing the least brood placed in the centre of the brood nest where the empty cells will soon be occupied with eggs. In the course of a day or two a frame of honey may be placed in the centre of the brood nest, after slightly bruising the caps of the cells with a knife. If the colony is well supplied with food, a frame of honey for the purpose may be procured from among the outside frames. Should there, however, be no honey available, an empty comb filled with sugar syrup will answer the purpose. The bees will at once commence to remove the greater part of this honey or syrup and thus give the queen more room for laying in a part of the nest that will be quickly occupied by her. The excitement amongst the bees consequent upon the removal of the honey has the effect of causing them to stimulate the queen by extra feeding, which induces her to lay a larger number of eggs.

The above process of arranging the brood and honey frames may be gone through every seven or eight days, taking care that the brood is not spread more than can be covered by the bees. If this is properly attended to the colonies will be in splendid condition by the middle of October; the hives full of bees and large quantities of brood hatching every day. The surplus arrangements may now be put on if honey is being brought in, or, if increase is desired, artificial swarming may now be proceeded with.

Preparing Colonies for Queen Rearing.—Every bee-keeper owning a half-dozen hives or more will find it greatly to his advantage to rear his own queens and to keep a few spare ones on hand in nucleus hives during the honey season for any emergency. By raising queens each season from the best stocks only, it will naturally follow that in the course of a few seasons an improved strain will be the result, which every apiarist should strive to obtain.

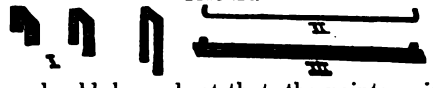
In selecting colonies from which to rear queens, those should be taken which are known to possess qualities superior to the rest. For instance, those which have proved themselves the best honey gatherers; at the same time other qualities should be taken into consideration, such as docility, prolificness, least liability to swarm, &c. The number of colonies required will depend upon the number of queens needed; for small apiaries one or two would be sufficient. These should be stimulated by slow feeding from the commencement of September, as before explained, and have a frame of sealed brood given to them occasionally from other stocks to force them on in advance, so that they will be ready to swarm at least two weeks before the rest. Another colony should also be prepared in the same manner from which to raise drones; a frame of drone comb being placed in the centre of the brood nest. The method of rearing queens will be explained in our next month's calendar.

Transferring.—The latter part of this and beginning of next month is about the best time for transferring bees and combs from boxes to moveable comb hives, as the combs will not be so heavy with brood and honey at this time as they will be later on.

For beginners we recommend the method given in the *Illustrated New Zealand Bee Manual*, which is as follows:—

"When about to commence operations, see that everything required is on hand before starting. You may need a small saw, a hammer, a chisel, a long thin-bladed knife, a smoker, or in lieu of this a roll of cotton rags, an old table-cloth or sheet folded up, and a board a little larger than the frames. A small table or a barrel turned bottom up will do to operate upon, and, lastly, some transferring wires. To make these, take some tinned wire—I use No. 16 bird cage wire. Lay a frame on its side, and cut the wire into lengths of an inch or so longer than the outside depth of the frame, *i.e.*, from the top of the top bar to the bottom of the bottom bar [fig. I, II.] You will probably require thirty of these to a hive. Having cut sufficient, make a bend in the wire a half-inch from each end.

Figures.

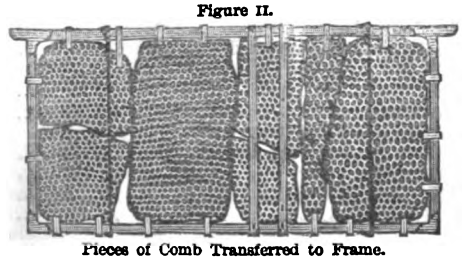


"These should be so bent that the points grip the top and bottom bar of the frame when in use. Clasps are also very handy; these are made of strips of tin an inch wide. [Fig. I.]

"The best time of the day to transfer is in the morning, when most of the bees are out at work. Everything being in readiness, light your smoker or roll of cotton rags, and blow a little smoke into the entrance of the hive you wish to transfer, and then carry it away a yard or two, and turn it bottom up. Place an empty box over it. Of course, if the bottom is nailed on, it will have to be wrenched off before the box is placed upon it. Tie a cloth round the junction of the two boxes, and with two small sticks rap on the hive for about 15 minutes. In the meantime the hive you are going to transfer to should have been placed exactly where the old one stood, so that the bees that are out on returning home may have a place to go into. The smoking and rapping on the hive will so alarm them that they will fill themselves with honey, and go with the queen into the upper box. As soon as most of them are in, lift if off and place it near where it stood before.

"You are now ready to transfer the combs. Lay the small board on the table or barrel, and the sheet nicely folded on the board. Now take your knife and cut the combs free from the sides of the hive, gently knock it apart, and take out the combs as whole as possible. When you have cut out the first, lay it on the folded sheet, lay the frame on, and cut to fit the frame. If larger than the frame, cut it so that by springing the frame open it will just go over. In this way the frame will grip the comb so securely that it will need no other fastening.

Figure II.



Pieces of Comb Transferred to Frame.

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"When the combs are smaller than the frames, it may require several pieces to fill them; even the smallest piece of straight-worker comb should be transferred. In this case fill to the best advantage, and put on the wires where required to hold it in position (fig. 11.) Now raise the board and cloth till the frame is vertical, and put sufficient wires on the other side to secure the comb. As each one is transferred, hang it in the new hive, keeping that containing the brood in the centre. Proceed as above until all the worker-comb has been fastened into the frames, and hung in the hive. Now raise it with small blocks of wood, off the bottom board, and shake the bees out of the box in front. They will at once enter, and in a few minutes commence to fasten up the combs and tidy up their new home.

"Care should be taken that none but nice straight worker-comb is transferred. Any clean drone comb may be kept to use as starters in section boxes; it should be put into the frames in the same position as built. This can be easily ascertained. By looking at a piece of comb in its natural position, it will be seen that the cells are built at a slight angle, the outer edge being the highest, the better to hold honey, &c. It is in this way they should be fastened in the frames. There are other ways of securing the comb besides using wire—such as winding twine around the frames, or tacking small strips of wood on each side, but it will be found that the wires are by far the best—they are easily put on and taken off. In two or three days the bees will have fastened the combs securely, when the wires may be taken off, and the work will proceed as cheerfully in the new home as though the colony had known no other.

"Bees may be transferred any time during the honey season. If done after the flow of honey has ceased, or while robber bees are about, the combs should be taken into some room to be transferred. If there is not sufficient to fill all the frames, put comb foundation in the remainder.

"Be sure that no crooked or awkward pieces are transferred, as they would cause no end of trouble; better by far use foundation."

STANDARD FRAME FOR AUSTRALASIA.

(Continued from page 15.)

In our last issue we pointed out the advisability of adopting a standard frame for Australasia, and gave some reasons why it would be advantageous to the bee-keepers of these colonies to use a frame of uniform dimensions throughout the length and breadth of the land. It now only remains for us to give our opinion as to the best size of frame to adopt.

It is, perhaps, necessary to mention as a reason for speaking of the frame only, that it is the most important part of the hive. And when once the size of this is decided upon the body of the hive may be made to contain any reasonable number. There is a limit, of course, to the number that may be useful in any one hive; but of this part of the subject we shall speak further on.

The sizes of the principal frames that have been in use hitherto, vary from 12 inches square to about 18 x 10. Although compared with the Langstroth size, *i.e.*, 17⅝ inches x 9⅛, the others in use have been very few in proportion. Of late years the advantages of the long and shallow frame over the deep and narrow one has been admitted by nearly every bee-keeper of experience, most of whom have now adopted a shallow frame. The size that appears to be a happy-medium between the two extremes of shallow and deep frames is that of the Langstroth. It is claimed by the few who still adhere to the deep and square frame that in cold climates the bees winter better on them; but this does not appear to be the case in practice, as, after the disastrous winter of 1881-82 in America, the statistics went to show that the average loss of bees was less in the Langstroth hive than in any other, thus showing that the shallow frame is superior even in this respect.

Some of the advantages of shallow frames are—1st. They can be made of a greater length than a deep frame without being inconvenient, thus affording a much larger surface on top for surplus boxes. 2nd. The bees have a less distance to climb to reach the surplus boxes when storing honey; and the hives being proportionately shallow, there is less risk of them blowing over in high winds. 3rd. They are much more easily manipulated than the deep frames, and with less risk of killing bees or injuring queen cells.

It will be now understood from what we have stated, that in choosing a frame for a standard, it is expedient to adopt a shallow one. The principal shallow frames in use at the present time are the Langstroth, and the standard adopted by the British Bee-keepers Association. The dimensions of the former have already been given; those of the latter are 14 inches long by 8½ inches deep, outside measurement. This size we do not consider nearly so convenient as the Langstroth size, for in adopting a frame we must take into consideration the raising of comb honey principally, and choose one that is adapted to its requirements, so long as these requirements do not materially interfere with other demands. Now, in raising comb honey for market, we have found that the 1 lb. section boxes are more readily disposed of and handier than those of a larger size. The square 1 lb. boxes are 4¼ x 4¼ inches, and eight of these just fill a Langstroth frame, and four a half story frame, so that we cannot imagine one more suitable in this respect. Looking at the matter from all points, and judging by our own experience, we feel convinced that we cannot do better than advise bee-keepers of the Australasian Colonies to adopt a standard frame, and let that frame be the Langstroth.

Number of Frames to Hive.—The next question is, How many frames should a hive contain? We have always used a ten-framed hive, and consider this number of frames as near the correct thing as possible. There are some bee-keepers who use but eight; but from our experience we believe that the brood nest would be too small for this country, as we have brood generally in all the ten frames through some portion of the breeding season. The consequence would be, with an eight frame hive, that the queen would be compelled to go into the surplus boxes to lay, which is the very thing we must do our best to prevent. In advising bee-keepers to use a ten-framed Langstroth hive we reckon upon having all the surplus honey stored above the brood nest, as we have proved this system to be the best. Perhaps, in concluding, we cannot do better than give an extract from our answer to a correspondent in the *Auckland Weekly News*, on the best size for hives, as this goes into figures:—

While experimenting I proved, to my own satisfaction, that the storifying process as against the collateral or side storing, was the best for obtaining surplus honey. It then

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only became necessary to have the lower or breeding hive of a sufficient size to accommodate the queen when laying to her full capacity, so that, if properly managed there would be no need for her laying in the upper or surplus storeys.

Now, the "Langstroth" frame (inside measure) is 8½ inches by 17 inches—one square foot. This will give, with 50 worker cells to the square inch, 7200 to the frame; 10 frames, the number for a hive, gives 72,000. As there are usually odd corners that are not filled up with comb, and a part of each comb stored with honey and pollen for feeding the brood, we can only reckon upon a little over two-thirds of the 72,000 cells being available for breeding. For convenience, say only two-thirds, 48,000, this will give sufficient space to allow of the queen laying at the rate of 2285 eggs (worker) per day; or allowing for a small proportion of drone eggs, which take three days longer to mature—about 2270 per day, which will be found ample in ordinary cases. Very often during a glut of honey, much of the above space will be stored with it, thus preventing, in a great measure, the queen from laying, and compelling her to go into the upper storeys in search of empty cells. It is then that good management is required to prevent this, by keeping the cells clear of honey in the lower hive.

Knowing the requisite size for the brood nest, in enlarging the hive, it simply becomes a question whether side or top storing is the better plan. I think there can be very little doubt about the matter. In early spring when it is necessary to give room for storing surplus honey, we often have some cold days, when the bees would do very little at the sides of a hive away from the brood nest; but if the extra room were given above, where the heat of the brood nest would permeate, the work of comb building could be going on as usual. If the "storifying" principle is decided upon, then enlarging the hive to any size required is merely a matter of putting on one or more storeys.

Messrs Bagnall Bros & Co., Turua, Thames, have forwarded us a sample of a cheap hive, on the comb-honey-rack principle, they have just manufactured. This hive, Messrs B. B. & Co. believe, will meet a demand amongst those who merely require to raise comb-honey for family use. It is a good, substantial hive, and, with the exception of rabbets round the edges, and the halfing on the ends, is exactly like the ordinary "Langstroth" they manufacture. It consists of one story, bottom board, rack for sections to be placed on top of lower hive, 28lbs sections, and separators. The price of this hive in the flat is, we consider, remarkably low, being only seven shillings.

APICULTURE IN QUEENSLAND.

BY C. FULLWOOD.

I PROMISED in my last to inform you how the Italians were introduced to this colony, and the results. Well, years ago, attempts were made and all proved failures by the bees perishing in transit, or, as in one case, proving hybrids. A. Macky, Esq., our commissioner to the Philadelphia Exhibition, succeeded in bringing a stock from America. The Italian strain was, however, quickly lost, and thus this attempt failed.

The writer of the present article, on paying a visit to Europe, three years since, determined to make another attempt, and secured five queens, put them up in a tenement hive, of 4 frames each, shipped them or board the 'Orient,' at Liverpool, in September, and landed all safe first at Melbourne, where he gave them a fly for a few days, then to Brisbane, where he landed all five queens; each having a good number of bees in November. Three of the queens were lost during the first two months. The other two did remarkably well, and numerous stocks were Italianized from them.

This venture having proved successful, an attempt was made by the writer to introduce queens direct from Italy. Chas. Bianconcini, of Bologna, was communicated with, and arrangements made for him to ship a package of twelve queens by one of the Orient liners calling at Naples. This was done, and in August, 1882, the package arrived at Brisbane, containing five living queens. In one box the only bee alive was the queen, and she is still presiding over a stock in our apiary. Of the other four, by accident one was destroyed, another was superseded by the bees after she had been laying some weeks; the others are still doing duty, and furnishing, as required, bees and queens to stock the apiary with yellow bands.

So far these have proved the most suitable bees for this moth-infested colony. They are decidedly more prolific and more persistent gatherers than the ordinary bee.

From all quarters where they have been introduced there is but one report—"very superior."

The only difficulty will be maintaining the purity of the progeny. In order to do so another parcel of twelve queens has been ordered from Italy. Should these arrive safely, or even half of them, pure Italians will be sufficiently numerous about Brisbane to cover all the blacks that are likely to be raised, for all around the blacks have been swept away by their relentless foe—the moth.

This direct introduction of queens is a matter of considerable importance to the colonies. If succeeding attempts do not fail greatly, a central position might be taken up from whence all the colonies might be supplied with queens and bee fixings. Sydney or Melbourne would be good for this.

It is somewhat surprising that these colonies are so far behind in this matter. We cannot obtain supplies. It may be that the introduction of Italians direct, and their successful acclimatization, will induce some persons to commence the business in one of the leading cities. The winter has been very mild so far. Bees have been working well all through; drones are still flying, and in about six weeks swarming will commence. Peaches are now in blossom.

[We shall be very happy to assist in establishing a central depot, from which queens imported direct from Italy may be sent to all parts of the Australasian colonies, as suggested by Mr Fullwood].

APIARY BOOK-KEEPING.

IN all industrial operations it is essential to success that the manager can always know exactly *what he is doing*, what progress is being made in each department or subdivision of his works, and what may be the results—beneficial or injurious—of each particular mode of working adopted. Where the operations are so simple, or confined within such limits that the "master's eye" can daily follow every detail, an intelligent practical man may see and do all that is necessary without the help of any written records of progress, or with the aid of only a few memoranda; but where they are very complicated or extensive it becomes necessary to employ a system of methodically noting and tabulating facts, so that the results may be brought before the eye in the simplest possible manner consistent with clearness and accuracy. Hence arises a sort of industrial "book-keeping," quite

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separate and distinct from the commercial accounts, and it is in such a sense that I now apply the term to the business of the apiary.

A system of this kind appears to be particularly requisite for the bee-keeper, because it is necessary for him to deal with each separate hive according to its peculiar circumstances, just as a physician should deal with each separate patient. A bee-keeper, with only one or two hives, or a doctor with only one or two patients, may carry all the details and symptoms of each case in his head; but when the hives or the patients are to be reckoned by tens or by hundreds, both the apiarist and the doctor require the aid of sytematic records, without which there is great danger of their applying an indescriminate mode of treatment, which, though harmless or even beneficial in some cases, may prove fatal in others.

I have not seen the subject mentioned in any book upon bee-keeping which I have met with, and felt rather puzzled to decide how such records should be kept without involving too much writing and details on the one hand, or a slovenly looseness on the other. I, therefore, think it may be well to invite a discussion on the question in the BEE JOURNAL, with the double hope of its proving useful to beginners, and of drawing some valuable practical hints from the more expert.

The plan we have tried in our apiary here is as follows:—There are kept: 1st, a daybook; 2nd, a registry of stocks; 3rd, a table for honey extracted; and 4th, one for comb honey.

The *Daybook* contains all the data for the other registries. It is only a small account book in which is opened a separate page for each stock, according to the number of its hive. In it is noted in regular succession of dates all the facts of any importance, commencing with date when hived, weight of swarm, whence obtained, age of queen; then dates of adding or taking away supers, of extracting honey or taking section boxes of comb-honey; with quantities in each case, and, of course, any event, such as giving a new queen, uniting a new swarm, &c. The page is only ruled with columns for the date, memoranda, and two on the right hand side for extracted honey, and comb-honey, to be entered in lbs.

The *Registry of Stocks* is a tabular form, either in a book of suitable size, or on a separate sheet of paper, ruled horizontally in blue lines for the entries, and vertically with red lines into columns, to be headed as follows:—1. No. of hive. 2. Date when hived. 3. Weight of swarm. 4. Whence obtained. 5. Age of queen. 6. Remarks. 7. First swarm, in four sub-columns, showing A—date, B—weight, C—age of queen, D—when hived. 8. Second swarm (as before). 9. Third swarm, do.

In entering the queen's age we distinguish between those brought out in the early months of the year, which is the close of the season, and the latter months of the same year, which is the commencement of another season, by adding a letter to the year number, thus '83E, and '83L; or it might be better marked '83-1 and '83-4, to represent the first and fourth quarters of 1883. This column must be wide enough for two or three entries, so that in case of changing a queen the old date may be crossed out and the new one entered in a clear manner. If the swarm is obtained from a source where the age of the queen cannot be ascertained, the entry is made thus: (?) to signify doubtful.

A glance at the registry at any time will serve to show all the events in connection with the history of each stock, which it is necessary for the bee-keeper to bear in mind.

The tables for "honey extracted," and "comb honey," are simply ruled horizontally with blue lines for the entries, and vertically with a column for date, then as many columns with consecutive numbers as there are hives to be dealt with, and the last column for totals. The date of extracting is entered in the first column, the number of pounds extracted from each hive on the same line in the column of the same number, and the total of each day's extracting in the last column. These tables afford means of seeing at any moment, by merely adding up the columns, what each hive, and what the whole apiary is producing.

It may be well to add that the weights of honey extracted are ascertained as follows:—A spring balance hangs in the extracting house with a light frame holder attached, in which are placed (in one or more lots, as necessary) all the frames brought in for extraction from one hive. The gross weight is noted upon a slate kept ruled in columns for the purpose; the same frames, after being uncapped and extracted, are again weighed, and the difference is, of course, the honey extracted. The entries on the slate are copied the same evening into the daybook and the tables. In the case of section box-honey the sections only are counted when taken away as filled, and are assumed to contain one and two pounds of honey respectively, although this is of course not always the exact weight.

Very little time is occupied in ascertaining and noting these weights. With proper arrangements it need in no way interfere with or delay the business of extracting, even in a large apiary where economy of time is, no doubt, of great importance during the extracting season. But even if the trouble were much greater, I do not see how any clear supervision of an apiary is possible without a knowledge of the details here alluded to. Any practical suggestions for simplifying the manner of ascertaining and recording those details would be very useful, and if certain forms of books and tables could be agreed upon as those best suited for general use, it would be a boon to all bee-keepers if they could be procured ready ruled and printed at a reasonable price.

T. J. M.

Bayview, Katikati, July, 1883.

[Our esteemed correspondent, "T. J. M.," was not aware, at the time of writing the foregoing article, that we had published an *Apiary Register*. He has since obtained one.

We consider the keeping a record of the doings of each colony of great importance to bee-keepers, and tends largely to the successful management of the apiary. No doubt our correspondent has compiled a very useful form of register book; but, as he says, if the manner of recording details can be simplified it will be a great boon to bee-keepers. To this end we shall have much pleasure in publishing any practical suggestions from our readers. Perhaps, if "T.J.M." were to kindly send us a copy of an opening of his book or books for publication, it would assist the matter considerably.

On the next page we give an opening of our *Apiary Register* on a much smaller scale than the original. It is almost identical with one published by the editor of the *American Bee Journal*. With this should be kept a rough memorandum book for noting down different items, the most important of which should be afterwards copied into the Register.—ED.]

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SAMPLE OPENING OF APIARY REGISTER, SHEWING METHOD OF RECORDING ITEMS.

COLONY No. 20.

HONEY.

QUEEN From .....

CHARACTERISTICS. *(Standard, 100 Points.)*

Year.	Month.	Day.	Principal Events in the History of this Colony.	Pounds of comb Honey.	Pounds of Extrd.	Bloom Gathered from.	When the Queen was Hatched. Year.	Mth.	Day.	Race.	Size.	Fertilized by.	Removed to	Industry.	Docility.	Hardiness.	Prolificness.	Color.
1882	10	15	Swarmed from No. 8.															
„	12	1	Artificially swarmed to No. 33, with queen and four frames brood and bees.				1881	11	25	Ital.	Med.	Blk. D.		80	50	70	75	Dk. yel.
„	12	4	Introduced fertile queen from No. 10 (nucleus.)															
1883	8	9	Honey obtained for the season.	56	70	W. Clo. Flax.	1882	11	2	Ital.	Large.	Ital. D.		80	70	70	75	Lt. yel.

REMARKS:

November 1st, 1882.—Put on top story with sections, after extracting 30lbs. honey from lower box. White clover abundant.
November 24th, 1882.—Removed 25 sections, and extracted 15lbs. from lower box.
December 6th, 1882.—Weather cold and showery.
December 24th, 1882.—Removed 31 sections, and gave frames of comb in upper story.
January 2nd, 1883.—Extracted 10lbs. Honey coming in slowly.
January 18th, 1883.—Light showers; extracted 20lbs.
March 10th, 1883.—Four frames sealed honey in upper story and 15lbs. in lower.
May 1st, 1883.—Prepared for winter; 35lbs. honey.

REMARKS:

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(For the N. Z. and A. Bee Journal.)

MATTERS IMPORTANT TO THE SUCCESS OF THE HONEY INDUSTRY.

SIR,—I have read with much pleasure the first issue of your new publication, the appearance of which I, in common with many others, engaged or taking an interest in apiculture, have hailed with much satisfaction. Business taking me frequently from home, I am not at present a practical bee man, but yet I hope to become one, and strive never to lose an opportunity, either to improve my own knowledge of the industry, or excite an interest in it on the part of others. The further I have enquired into the matter the more am I satisfied that with ordinary diligence, care, and perseverance, bee culture offers safe and profitable inducements to all who will give it their intelligent attention, my conclusion in the matter being abundantly confirmed by the returns furnished from countries much less favourably situated in respect to climate, &c., than is our adopted land.

The question which I specially wish to call attention of all honey producers to, as one of very great importance, is the matter and manner of marketing honey! In view of a large and increasing production, this is a question which should claim the attention of every bee-keeper. That there is a large demand for honey is abundantly proved by the quantities imported from California. This demand our apiarists should seek to satisfy, and if they will go the right way to work may not only do so, but also largely increase the consumption. But if the local market is to be satisfactorily supplied, much more attention will have to be given to the "get up" of the article than has been the case in the past. So long as honey is sent to market in the rough style that has prevailed, without classification, in unsuitable and unsightly packages or vessels to take its chance at the auction mart and go for what it will fetch, it will rarely be disposed of at a satisfactory price, and what with shipping, carting, and rough handling, even good honey, under such treatment, cannot be "well placed." Let bee-keepers study to ascertain in what form the commodity can be best placed before consumers, seek out suitable agents (supposing they are unable to see to it themselves) and get them interested in pushing the sale and making the merits of the article known, and there need be no fear as to the result; but the article must be "up to the mark," and not such as the writer has on the recommendation of even respectable Auck land grocers, recently bought in tins labeled, "Pure N.Z. honey," and which, on being opened, proved to be a nasty, unpalatable, unsightly mass, quite unfit for human consumption. Honey, doubtles, but—bah! the sale of such stuff is enough to condemn the local article for all time; and small wonder that after more than one experience of this kind, when honey is required, unless section is obtainable (which isn't often), the Californian is taken in preference to local. Honey should and may be sold at prices that will place it in the reach of all, and make the neat little lb sections as well-known on the table as the pat of butter. Hundreds never use it because they are not alive to its merits, or it is not brought prominently before them, or within their reach in a convenient form. More might be said, but this letter is too long already, and my object is rather to call attention than suggest detail. Meanwhile I am doing what I can in a quiet way to encourage the use of honey as an article of regular consumption in every household, and advise all interested in the traffic to do likewise. Wishing much success, I am, &c.,

COMMERCE.

Auckland, July 13th, 1883.

[The subject chosen by "Commerce" for his paper is one that we commend to the notice of all bee-keepers engaged in raising honey for market. Next to the raising of honey, the style and manner of marketing it is of the greatest importance. We quite agree with all that our correspondent has written, and shall have plenty to say on this matter ourselves in due season. —ED.]

(For the N. Z. and A. Bee Journal.)

All correspondence must bear the name and address of the writer, not necessarily for publication, but as a guarantee of good faith.

THE JOURNAL REQUIRED.

SIR,—The first number of your journal is to hand, and I hasten to offer my hearty congratulations. In appearance and matter it is to my mind very creditable. I shall be glad to hear of its obtaining a large circulation, as I am well aware that there is a wide field for it, in educating the settlers of these colonies in the "scientific" way to keep bees. Probably the most advanced will find that they have much to learn, which can only be learned by experience, and your journal will afford the best means for comparing results. Fortunately we can avail ourselves of the experience and progress made by the English and American bee-keepers, who have made such rapid strides of late years, but there are so many different circumstances met with in New Zealand that it will not always be safe to apply the experience of other countries to this. This brings me to the point which I would like to impress upon every bee-keeper in the country, that every circumstance of interest should be carefully noted, with a view to its being made public if desired. It would be difficult to enumerate the subjects which require notice, but wintering, increase of stocks, yield of honey, different breeds of bees, diseases of bees, kinds of hives, pasturage, and marketing, should receive attention, I shall probably have something to say hereafter on a few, if not on all, of these subjects, with your permission, Mr Editor.

I have been keeping bees in bar-framed hives for over five years with varying success. I commenced with the bar frames without comb foundation (I had not heard of it then), and found that the bees built their comb without regard to the frames, so that I might as well have had them in a gin case. It was you, sir, who introduced me to the comb foundation some four years ago, and I have used it ever since and would not attempt to keep bees without using it. The Thames is a comparatively poor locality for bees, which in a great measure accounts for the moderate results obtained, both by the writer and others. In the winter of '82 I had eight colonies in Langstroth hives in good condition, with plenty of honey, I lost three by "Spring dwindling,"

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one leaving several frames well filled with honey after the bees were all dead. I increased those remaining to 11, and took about 200 lbs. of honey during the summer, and have about 100 lbs. in top stories at present. Eight colonies are strong at this date, but three are weak and require feeding. I have one colony of Italians, four hybrids, and six black. The hybrids gathered the most honey. They are rather cross, although not more so than some black ones which I have. I have seen it stated that the Italians would rob and destroy all the black bees. This does not agree with my experience. I have had some robbing in my apiary, but have not seen a single Italian robber at a black hive, while on the other hand I have frequently seen the black bees trying to gain admittance in a sneaking way into the Italian hives.

I shall now conclude this rambling letter by wishing you and your journal every success.—I am, &c.,

L. J. Bagnall,
Hape Apiary, Sandes-street.

Thames, July 14th, 1883.

[We shall be pleased to receive from our correspondent, Mr L. J. Bagnall, papers on the subjects he has mentioned for publication, knowing him to be fully competent, by experiences, to handle them all in an able manner.—Ed.]

HOW I BECAME A BEE-KEEPER.

It was not by any experience gained in the backwoods of N.Z.—for that was naught—true I had helped to lay low many a rata in search of the sweet spoil which, when obtained, I "pekaued" home, though candour compells me to confess that when it came to the actual robbing of the prostrate giant I generally made a strategic movement to the rear, confident that for me just then the wisest policy was that of masterly inactivity. Nor was it from any advice tendered by my neighbours. Liberal as men are of this, they had not emerged from the dark ages of straw hives and sulphur. No, it was after many days and in this hyperborean region that vague rumours came to me of a man who rashly despising the accumulated wisdom of our fathers, had departed from their simple faith in straw and sulphur, who made the combs for his bees and emptied them, when full, with a machine; who employed several men to look after them, and lastly, most incredible of all, who had such command over the bees that they were more afraid of him than he was of them. This was the last straw, and I found myself in the position of the old woman who implicitly believed her sailor son's stories of the mountains of sugar and rivers of rum, but denounced him as a liar when he spoke of fish that could fly.

Taking the train one fine morning, I made the run of 70 miles to this necromancer's village. Standing on the rear platform the whole way I noticed with keen interest the difference between the North American and New Zealand bush. True to my British instincts I dined, and then proceeded to invade the home of Mr D. A. Jones, of Beeton, Ontario. After a brief interval of waiting that gentleman came in, and learning my errand, invited me to come out into his garden. Here were several rows of grape-vines neatly trellised, and between them a large number (135) of wooden boxes, uniform in size, somewhat cubical in shape, but various in colour. Contrary to all my preconceived notions they were only four inches above the earth, and a rude approach in the shape of a piece of board was placed in a sloping position between the mouth of the hive and the ground. Imitating a distinguished New Zealand author "I plucked up a good appearance of courage" and followed my host between the rows of hives. Noticing how short the rank growth of herbage was kept, I enquired how this was effected, when Mr Consi, the foreman to whom I am much indebted, told me that he generally stacked several of the hives one on the other and mowed the ground sometimes with a scythe and sometimes with a lawn mower. Picking up a small piece of decayed wood, Mr Jones lit it and proceeded to remove the lid of one of the hives. Remembering my New Zealand tactics and that "discretion is the better part of valour," I prepared to seek the seclusion offered by a friendly shed, but was desired to remain where I was. Mentally comparing my host to the American humourist's Assyrian charger, "whose boldness will be the death of him some day," I waited and watched. Quietly removing the lid he tore up one corner of the cotton coverlet and blew with his lips a little smoke from the piece of rotten wood into the aperture, dispersing those bees of an enquiring turn of mind who had come up to investigate. Repeating this operation, he finally, after a brief waiting, removed the coverlet, and drawing a frame in a few seconds gave me my first sight of a queen bee. What else I saw and learned, how I ultimately became "bee-crazy," and how by diligent sitting at the feet of this Gamshiel, or rather at those of his foreman, I became a bee-master must be told in another number.

Niu Tireua.

Hamilton, Dom. of Canada,
June 19th, 1883.

BEE-KEEPING IN THE WAIKATO DISTRICT, N.Z.

Sir,—Although scientific bee-culture is almost in its infancy here, it has made rapid strides since its introduction now some three years ago. Prior to that time the only hive in use was the "time honoured" candle, kerosene, or soap box; anything in fact that would hold together until the autumn, when, if the owner thought they were heavy enough with honey, the poor bees would be "put down," *i.e.*—brimstoned out of existence, and if light they would be left—the inmates to get on as best they could, to be as likely as not all found dead in the spring. I am glad to be able to state that the use of the murderous brimstone here is almost a thing of the past, and bee-keepers have begun to see that there is money in the bees if they are only properly managed; so that instead of the old boxes stuck in out-of-the-way corners of the garden and overgrown with weeds, with old rotten sacks thrown over the tops—breeding places for vermin instead of bees—and junks of firewood on top of all to keep them from blowing over, is to be seen the neat and tidy "Langstroth," placed in a conspicuous part of the garden or lawn; an ornament as well as a useful article.

The past season in this district, as far as I can learn, has been very satisfactory to those who have been keeping pace with the times. Several bee-keepers, however, that worked their bees too close, have discovered that that is a penny wise and bad policy; having lost some of their stocks, and been put to the trouble of feeding the re-

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mainder. Others have gone in for increasing when the season was too far advanced, which told a tale on the wrong side of the ledger. One or two individuals are mourning the loss of all their bees. My own bees averaged 106lbs of honey per colony, comb-honey in one pound sections. Of course I kept down swarming as much as possible.

I overhauled them this week and found them in good condition, with plenty of honey to carry them through the winter. On fine days they are out and booming on the blue gums. In another month *Limnanthus Douglasii* will be in blossom, which, by the way, is a splendid plant for spring feeding, and very hardy. I have had spikes of flowers on mine a foot across, and literally swarming with bees. *Arabis Alpinus* will be in blossom about the same time; another good early honey plant.

I am very much pleased, indeed, with the appearance of the BEE JOURNAL. It will fill a void in the bee-keeping industry, and I hope it will be, as it deserves to be, well supported. With best wishes for its success.—I am, &c.,

W. DEY.

Hamilton East, Waikato, July 12th, 1883.

WANGANUI AS A BEE-KEEPING DISTRICT AND OTHER ITEMS.

SIR,—Judging by the equability of the climate on this coast, the variety and excellence of the bee pasturage to be found here, and the immense number of wild swarms in the bush, I should say that it is a capital district for bee-keeping. The nests of these wild swarms often contain large quantities of honey. From one nest in a pine tree I took two large buckets of delicious honey; while another gave me three buckets. We have a great number of flowering trees and shrubs—both native and cultivated—from which the bees are to be seen busy gathering their stores. Among them I may mention koromiko, kahikatea, wild clematis, lawers, flax, nikau palm, rata, karaka, native fuschia, matai, blue gums, mirau, gorse bushes, and broom. The two latter have, in some places, overrun acres of ground. They seem favourite bushes of the bees, and as they are blossoming nearly all the year round they must be of great assistance to them.

Most settlers here keep their stocks of bees; the produce being kept for family consumption. The implements of the apiary in use, and the methods of management being of the rudest description. Given, a swarm of bees on the wing; out runs the whole family, each member snatching up a stick and kerosene tin or some other "musical instrument" that may be handy, when they at once commence hammering away, each one trying to outdo the other in making a deafening uproar; while the good housewife at last comes upon the scene with a bell as the best thing she can procure. Should the swarm settle, a kerosene or whisky case is hastily prepared, and having been smeared with a little honey, the swarm is shaken into it, and at night put under a shady tree. In due time, when the box is full of honey, the bees are cruelly smothered by the fumes of burning sulphur, and the honey removed. A farmer on the Wanganui river caught six swarms last year, two of them were destroyed in the above manner, and gave 102 lbs of honey; the other four were left to provide swarms for the coming season to be again destroyed in like manner probably. Another farmer thinking to add a little to his profits, caught 82 swarms, and housed them in various boxes; but to his astonishment he found in the autumn that all the boxes were empty, some of the swarms having died, and the rest taken their departure. All the combs were empty, and the bottom boards were covered about a quarter of an inch deep with putrid matter, through which some white worms were working their way. I had a similar experience last year with four boxes of bees, which I put down to the effects of the bee moth. I then determined to try the bar-frame hive, and made one from a description given in the *Australasian*.

Having no bees left, I looked out for a swarm, and caught a very late and small one on January 25th. On February 11th I looked into the hive and found four frames full of capped honey. On March 4th the bees had built comb in six frames, some of it containing brood. The brood commenced to hatch on the 19th, and it was very interesting to watch the young bees making their first appearance outside the hive. On the 26th I first discovered the queen amongst the combs. The bees seemed to me to be progressing favourably until a very cold and severe gale came on, when, in the morning, I found the roof of the hive had blown off, as also the mat, and the whole of the bees dead. I was, however, so well pleased with my limited experience of the improved hive that I sent at once for your "Simplified Langstroth," and hope soon to make another start. A friend of mine is trying what he calls a "bar hive," that is, bars across the top of the box only. As soon as the lower box is full, which is ascertained by looking through a glass window, another box is placed on top, which is removed when filled. As the bees do not restrict themselves to building their comb along the bars, but sometimes build across them, I cannot see the advantage of the bars.

As far as I have heard no one in this district, with the exception of myself, has tried the bar-framed hives, and I intend exhibiting one of those I have received at our Agricultural Show in September next.

I am ordering the BEE JOURNAL through my bookseller. Wishing you every success with it,

I am, &c.,

C. W. BABBAGE.

Wanganui, July 8th, 1883.

[It is a great pity that more attention is not paid to bee-keeping in so good a district; but we doubt not that as soon as our friend starts scientifically others will immediately follow in his footsteps.—ED.]

REMEDY FOR BEE STINGS.

SIR,—The best antidote for the bee sting poison I have ever used is Coutts' Acetic Acid. A small sponge or piece of cloth soaked in it and applied to the part after removing the sting, kills the poison in a minute, and all pain and swelling is gone; the small puncture is the only thing to be seen. This simple recipe may be new to some of your readers.

JAMES M. CLARK.

Woodside, Pollock, July 28th, 1883.

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SUBSCRIBING TO THE JOURNAL.

SIR,—I have received a copy of the BEE JOURNAL, and shall become a subscriber, as I think it will be of great assistance to bee-keepers in these colonies. Every apiarist in Australasia should subscribe to it, and send you a report of their doings for publication; and also a statement of their failures or mistakes as well as successes in order that each may assist others with their experience.

I commenced last season with two colonies in Langstroth hives; I afterwards bought two, making four altogether. These I increased to 13, which eventually were united down to ten strong colonies, all in Langstroth hives. In May I moved them from Coromandel to Parnell, Auckland, an account of which I gave you in my last.

From my first experience in moving bees I have come to the conclusion that it is a mistake to move them any distance over rough roads on new or first season's combs, more especially when they are heavy with honey and brood.

JAS. LANGFORD.

Parnell, July 19th, 1883.

THE JOURNAL.

I have at last seen the journal (first issue). My copy came from Napier. Mr Adams here had only one copy, which he had lent to a friend, so it was out three weeks before I saw it at all. I think it is first rate, quite beyond my expectations, and it will increase in interest as time goes on and contributions pour in from bee-keepers in all parts of the country.

G. STEVENSON.

Ormond Apiary, Gisborne,
August 3rd, 1883.

[Evidently your copy of the journal must have miscarried, as we posted copies to all the bee-keepers we were acquainted with on the 2nd of July. Copies of each issue will be posted promptly to subscribers at the beginning of every month.—ED.]

THE JOURNAL APPRECIATED.

SIR,—I am very much pleased with the NEW ZEALAND AND AUSTRALIAN BEE JOURNAL, and sincerely hope it will be well supported, and kept up to its present promise. I will contribute my mite to the best of my ability. I will try and send you a letter for the JOURNAL in a day or two, if only to show how thoroughly I appreciate it.

E. D. H. DALY.

Woodside, Hautapu, July 6th, 1883.

THE requisites for a good honey crop are a hive full of comb, spaces between combs full of Italian bees, abundance of flowers and favorable weather.

A dog of ours was curious enough to investigate the entrance to a bee-hive the other day. We saw him immediately after, and came to the conclusion that he had a severe cold in his head, by the way he was wiping his nose with his paw.

For the N. Z. and A. Bee Journal.

FROM BANKS' PENINSULA.

SIR,—I am greatly pleased with the journal, and have ordered it for twelve months. My apiary is at German Bay, Banks' Peninsula. In the immediate neighbourhood there are orchards, willows, gorse hedges, and abundance of white clover, also native trees not far off. Have had bees there for fourteen years, and for the last three have used bar-framed hives. Last Spring I had 45 stocks, and increased these by swarms to 90, taking 3300 lbs of honey from them. I did not take any until the latter end of December. Think I should have commenced earlier as I then found the honey so thick that I could not extract it with the slinger, so had to cut up the combs and drain in the ordinary way.

How am I to get pure Ligurians? I should like to have them as they are said to gather so much more honey than the common bees? Wishing success to the NEW ZEALAND BEE JOURNAL, I am, &c.,

ROBERT DAWBER.

259, Hereford-street, Christchurch,
July 14th 1883.

[We have sent you a price list of Ligurian bees, &c.—ED.]

FINE WEATHER.

JUNE was a lovely month here. No rain and bright sunshine. Bees all doing well, and flying every day.

G. STEVENSON.

Ormond Apiary, Poverty Bay, 2nd July, 1883.

We are in receipt of several communications from our correspondents, which arrived too late to be inserted in this issue, but will be published in our next.

FROM OUR CONTEMPORARIES.

HUMBLE-BEES AND THE CLOVER.

Prof. C. H. Fernald has written the following article for the Maine *Farmer* on the "Humble or Bumble-bees, their habits and uses," which will be of much interest to many of our readers. The fertilization of flowers, both by these bees as well as by the *Apis Melifica*, or honey bees, and other insects, is a subject of considerable interest to farmers as well as to bee-keepers. Prof. Fernald remarks as follows:

"The Humble-bees, or Bumble-bees as they are sometimes called, are among the largest and most showy of our Maine Hymenoptera, and are extremely useful to the farmers for the work they do in cross fertilizing red clover. It is well known that the flower tube of this plant is so long that few insects have a sufficient length of tongue to reach the nectar in the nectary, and therefore, it is not often frequented by honey bees and other nectar-loving Hymenopterous insects. We are, therefore, greatly indebted to the Humble-bees, for their visits to the clover, their great hairy bodies become more or less powdered with the pollen, and when they visit other clover heads their flowers are fertilized by the pollen which the Humble-bees have brought from the flowers previously visited.

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It has been claimed, and without doubt correctly, that unless cross fertilization is effected in some way, the clover will run out. Darwin covered 100 flower heads of red clover with a net to keep the insects from them, and not a single seed was developed, but from 100 heads on plants growing outside, which were visited by bees, there were obtained 2,720 seeds. Experiments, of a similar character have been repeatedly performed both in Europe and in this country, and with like results. In all my observations I have scarcely ever seen any other insects visiting red clover than humble-bees.

These insects are pretty generally distributed over the world, being found in both North and South America, in Europe, Asia and Africa, but not in Australia and New Zealand. It is in northern latitudes that they thrive best, and they even occur in the most northern regions to which man has penetrated.

In Australia there are no native insects adapted to the cross fertilization of red clover, and it has been attempted to introduce humble-bees into that country for this purpose, but with what results I have not yet learned.

There are four different kinds in a colony of humble-bees, the large females or queens, the small females, the workers and the males. Only the queen lives over the winter, and she hibernates either in the nest or under fallen leaves, or in some protected place. When the warm days of spring come, these large females, or queens, may be seen flying from place to place, crawling in and out of places, around and under stumps and stones, hunting for some place in which to make their nests.

When one of these queens finds a suitable place, as a deserted nest of a field mouse, or some hole under a stone or stump, she at once collects a small amount of pollen, which she mixes with honey, making a more or less sticky mass which she sticks into the pollen basket on the outside of the hind leg, and in which it is carried to the nest. As soon as a small mass of this food is collected, the queen deposits several eggs in it without order, and without even constructing any cells, but she continues the work of collecting pollen and laying eggs until the first brood emerges. As soon as the eggs hatch, the young begin to eat of the mass of food which surrounds them, thus enlarging their cavity gradually until they reach their full growth as larvæ, when they spin a silken wall around themselves, lining the cavity which they have excavated in the pollen mass. The old bees close up these cells with a thin layer of wax, and the young transform into pupae, and in due time change into the perfect stage and cut their way out, when they are ready to assume their duties as workers, small females, males, or queens, according to their individual formation.

In the spring and early summer, only the large females are to be seen abroad on the wing, but the first brood consisting of workers only, as soon as they emerge, at once take upon themselves the work of the nests and the collecting of pollen and honey, while the queens remain in the nests. After this time, only small bees are to be seen visiting the flowers and these are the workers.

As the queen continues prolific, more workers are added, and the nest is rapidly enlarged. About midsummer, eggs are laid which produce both small females and males. It is supposed that they pair near the end of the season, and as a result, these small females lay eggs from which the queens are developed. It has been proved that all the eggs laid after the first of September, produce the large females or queens, and as the males are still in the nest, the queens are impregnated in the air after the manner of the honey bee. On the approach of cold weather all the humble-bees die except the queens, of which there are now several in each nest. These queens hibernate during the winter, and in spring they revive to repeat another cycle as described.

Twelve different species of humble-bees belonging to the genus *Bombus*, are known to inhabit New England, and of these I have taken five in Orono.

I am not aware that these insects are in any way injurious, but from the above showing they are of immense value in cross fertilizing plants, and should be protected. Mowing machines and horse rakes destroy their nests when run through them, but this should be avoided when possible.

It is true that they sting upon severe provocation, as when one attempts to destroy their nests, but who wouldn't fight for their own homes and firesides.—*American Bee Journal*, June 13, 1883.

SALT FOR THE APIARY.

Use salt freely about your hives. Sprinkle a little water, with plenty of salt, outside and in the hives, when the bees are troubled with ants. Good salty brine is of much value in destroying moth eggs about hives. Rock salt is good to make brine of, to prevent foul brood, which sometimes destroy whole apiaries, and is to be much dreaded by the apiarist. It is better to use an ounce of prevention than a pound of cure. Use small troughs for the brine.—*Grange Bulletin.*

QUERIES AND REPLIES.

We shall from time to time give replies through this department to questions pertaining to bee-culture, propounded by our subscribers. We would ask our correspondents to be as concise as possible, and to number their questions 1, 2, 3, and so on.

Query.—*Mouldy Bee-bread, Unhatched Brood, Finding Queen, &c.*—1st. What had better be done with comb containing mouldy bee-bread? 2nd. In giving the bees their winter stores should the combs containing honey be placed together, or alternately with empty ones? 3rd. Will unhatched brood in combs, at approach of winter, cause foul brood? I have picked out all (about twenty) with a needle. It is a March swarm. 4th. What is the matter when four or five bees surround another, as if cleaning it, at this time of the year? It is not young bees or robbers that are treated in this manner; they eventually are allowed to go into the hive. 5th. When searching for the queen it seems to put the whole hive in commotion; will she leave the frame by taking wing?

R. Henderson,
North Oruawhare.

Reply.—1st. If the comb is very mouldy melt it up into wax; but, if only slightly, dry it and put it into the centre of a strong colony, and the bees will soon clean it. 2nd. It does not much matter how you place the combs, so as they are near the centre of the hive. It is better not to have the outside combs of honey too far away from the cluster. 3rd. It is always advisable to examine cells containing unhatched brood at any time of the year. It may not cause foul brood, although it would be better that the combs were clear of dead brood. 4th. We do not think there is anything the matter, if it is not robbers trying to gain an entrance. It may be that the sentinals of the hive have been suspicious of the others, and have put them under a strict examination; or, the new arrivals may have come in with a load each, and the others have been anxious to know where they got it from. We really cannot say positively what is their reason for acting in this manner. 5th. The queen will never leave the frames to fly away when looking for her under ordinary circumstances, especially if she is a fertilized queen. Virgin queens are very shy, and act rather eccentric at times, but we never lost one in this manner.

Query.—*Italian Queens and Foundation Machines.*—1st. Are your queens pure Italian or hybrids? 2nd. When would you recommend me to get the Italians? Is October early enough? 3rd. Should I Italianise every hive as soon as I have a queen ready to substitute for the black one? 4th. What machine, and what size of roll do you use for heavy foundation. The "Given" appears to be the latest out. Do

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you think, from the descriptions of it in the *American Bee Journal*, it is the best in the market?

G. STEVENSON,
Gisborne.

REPLY.—1st. Some of our queens are pure and some are hybrids. We breed from pure queens only. 2nd. We would advise you to get Italian queens as early in the season as possible. We cannot promise to send out queens earlier than November. 3rd. Yes. 4th. We use Root's best 9in. roll machine for heavy foundation, and Vandervort's 6in. for thin foundation. The "Given," we believe, is the best for putting foundation in wired frames, which is the most that is claimed for it. The "Given" is a press, as perhaps our correspondent is aware.

QUERY.—*Bees and Clover.*—I am a beginner in bee-keeping. I started last November with one colony in a gin case, which I afterwards transferred to a Langstroth hive. I increased during the season to seven by artificial swarming. I have now six black colonies, and one hybrid, all strong.

I wish to ask the following questions:—1st. Is there any honey in firs? 2nd. Do bees take all the fattening out of clover? I hear there is a farmer complaining about the bees trespassing on his farm. 3rd. Do bees do any harm to a farm?

T. W. CRAWLEY & SONS,
Te Awamutu.

REPLY.—1st. If you mean fir-tree blossoms, we believe there is not; but honey-dew is sometimes obtained from the foliage by bees. 2nd. No; read any good work on botany, and you will find that instead of bees doing harm to plants by working on their blossoms, they do an immense amount of good. We shall have something to say upon this subject in a future issue. 3rd. No; on the contrary, cultivations on farms are much benefitted by bees. Your fourth question we do not understand, and as your fifth does not relate to bees we cannot answer it, even if it lay in our power, which it does not.

QUERY.—*Introducing Queens.*—There is a question I wish to ask through the JOURNAL. Is it necessary to cage a queen when introducing her to a hive that has just swarmed?

H. BERRIDGE.

Mititai, Wairoa North.

REPLY.—If we had a valuable queen that we did not wish to run any risk of losing, we would cut out all queen cells and introduce her by caging in the usual way. But when we have plenty fertilized queens on hand we cut out the queen cells, and in a few hours afterwards put the new queen down at the entrance and let her run in. We have rarely lost any by this method.

CIRCULARS RECEIVED.

WE are in receipt of Messrs. Bagnall Bros. & Co.'s Circular and Price List for 1883-84, of hives, artificial comb foundation, and general supplies for bee-keepers. It is a neatly printed and profusely illustrated pamphlet of sixteen pages. We notice a considerable reduction upon former prices, and additional appliances enumerated. The above is sent post free on application. The firm's advertisement appears in another column.

NOTICES TO CORRESPONDENTS.

W. H. CASSIN, Alexandra.—We have sent you a list and a copy of the JOURNAL.

T. L. H., Auckland.—We have not yet glassed any honey. But, no doubt, if you write to Mr. Cook, of the glassworks, Freeman's Bay, Auckland, he will give you particulars as to the cost of honey jars.

Subscriptions to the JOURNAL may commence with any month in the year.

HONEY MARKETS.

AUCKLAND, September 1st, 1883.

The demand for extracted honey is very good. Prices at present are—for 1lb. tins, wholesale, 8s to 8s 3d per doz.; retail, 10d to 1s per lb.

AUCKLAND AGRICULTURAL AND MERCANTILE CO., Limited.

ENGLAND.

Extracted Honey:—9d to 10d per lb, in bulk; 1lb bottles, 11d to 1s 2d; supply abundant.
Comb-honey, in sections:—1s 2d to 1s 6d.
Other forms:—1s to 1s 2d; supply abundant.
Wax:—1s 4d to 1s 6d.
—*British Bee Journal*, July 1st, 1883.

AMERICA.

NEW YORK, June 22, 1883.

We take pleasure in sending you our present quotations on honey and wax:—

	c.	c.
Choice white clover, in 1lb sections (no glass), per lb.	20	@ 21
Choice white clover, in 2lb sections (glassed), per lb	18	@ 20
Fair grades clover, in 1 and 2lb sections, per lb	16	@ 17
Choice buckwheat, in 1lb sections (no glass), per lb	15	@ 16
Choice buckwheat, in 2lb sections (glassed) per lb	14	
Extracted clover, in kegs and small bbls, per lb	10	@ 11
„ buckwheat „ „ „ „	8	@ 8½
Prime yellow beeswax, per lb	36½	

H. K. & F. B. THURBER & CO.
—*Gleanings.*

SAN FRANCISCO July 9, 1883.

Honey—New extracted is arriving freely—selling for 7c. and 8c.; new comb coming forward slowly; extra white, 16c.
Beeswax—None in the market.

STEARNS & SMITH, 423, Front-street.
—*American Bee Journal.*

OUR HONEY IMPORTS.

THE value of honey imported into the United Kingdom during the month of April, 1883, amounted to £1518.—*British Bee Journal.*

SPECIAL NOTICES.

QUERY AND REPLY DEPARTMENT.—Correspondence for this department should reach the editor not later than the 15th of each month, when replies are required in the next issue.

ADVERTISING DEPARTMENT.—Advertisements for the next issue should reach the publisher by the 24th of each month.

Correspondence for publication may be sent at book post rates *i.e.*, one penny for every two ounces, providing the book post regulations are complied with, and the words "Press Manuscript" are written on outside of cover.

Our Correspondents will oblige by writing articles for publication on one side of the sheet only.

P.O. Orders for Subscriptions, Advertisements, &c., to be made payable to J. C. Firth, Chief P.O., Auckland, and sent under cover to H. H. Hayr, High-street, Auckland, or P.O. Box 186.

SCALE OF CHARGES FOR ADVERTISEMENTS.

Single Column.	£	s	d	Double Column.	£	s	d
Three lines	0	1	6	Page	2	10	0
Per line afterwards ...	0	0	6	Half page... ...	1	7	6
Inch of space	0	3	6	Third of page ...	1	0	0
Quarter column... ...	0	8	0	Quarter column ...	0	17	6
Half column	0	15	0				
Whole column	1	5	0				

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6 „ ...	10 „	24 „	30 „

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THE NEW ZEALAND AND AUSTRALIAN

BEE JOURNAL.

Devoted exclusively to Advanced Bee Culture.

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All correspondence intended for publication to be addressed to the Editor, Matamata, Auckland, New Zealand, and business communications to the Publisher, P.O. Box 186, Auckland, New Zealand.

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CALENDAR—OCTOBER.

FROM present appearances the commencement of the main honey harvest will be a week or two later than usual. Probably it will be the latter part of the month before there is much honey obtained from white clover. Although we have had some splendid weather during a part of the last month, the nights have been exceptionally cold, with occasional sharp frosts, which has retarded the growth of all honey-producing plants.

Bees are very busy carrying in large quantities of pollen and water for feeding the larvæ now being reared in considerable numbers. Colonies should be examined at least once a week, and the instructions given in last month's calendar—with regard to arranging the brood frames—attended to. Hives set apart for queen-rearing should be getting well advanced, and have drone brood ready for hatching in a week or so. Weak colonies may be strengthened by giving them a frame of hatching brood from the strongest occasionally; or, if there are *several* weak ones, they should be united at once.

As the season is likely to be a little backward, in all probability swarming in most districts will not commence before the latter part of the month. Everything, however, should be prepared in time, such as setting out hives ready to receive the swarms, making swarming boxes, &c. Entrances to hives may be enlarged as the weather gets warmer by pushing them forward on the bottom boards. Grass and weeds growing about the apiary should be cut short and kept in a tidy condition. Artificial swarming may be proceeded with towards the end of the month. Surplus boxes may also be put on as soon as honey is being gathered in fair quantities.

UNITING.—If by any chance there should be several weak colonies in the apiary at this time of year, it is better to unite two or more, and so make one good colony, rather than let them linger on in their weak state, while the best of the honey season is passing away. Various methods are adopted by different bee-keepers for uniting, but we have always found the following to answer very well indeed :

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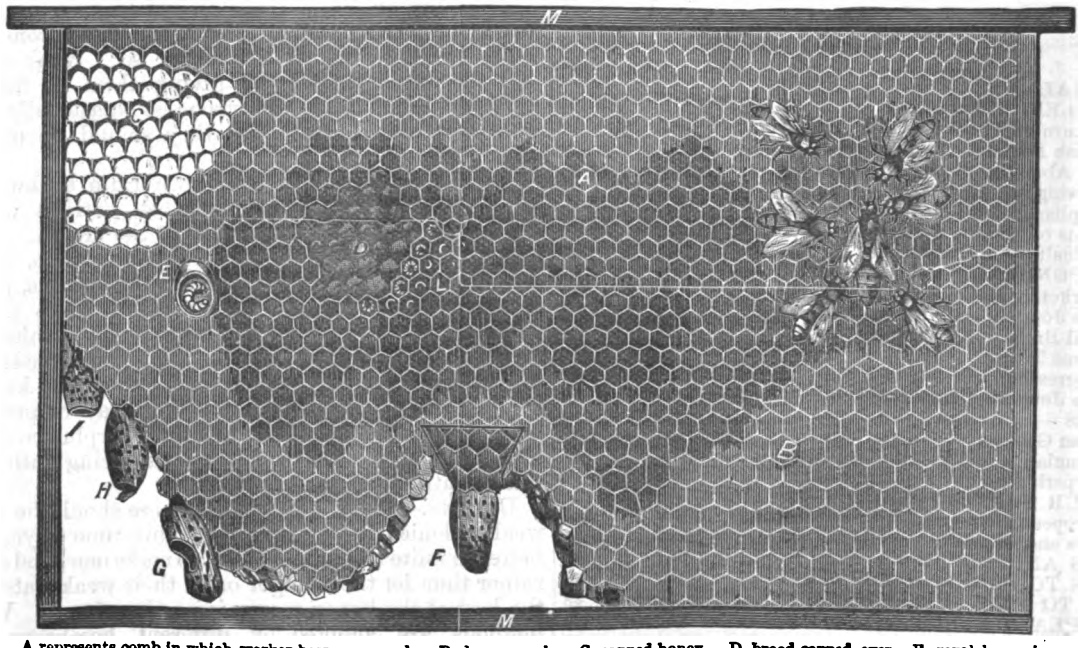
"Move the weakest of the two colonies to be united a few feet every day till close to the other; in the evening lift off the covers of both hives, roll back the mat of the strongest, and if the bees are clustered on the centre combs, remove the side frames and shift those on which the bees are clustered over to one side of the hive. Now remove some of the vacant combs on the opposite side, and gently lift out the frames on which the bees are clustered in the weakest one, and place them on the side of the strongest hive from which the other frames had previously been removed, place two or three vacant combs between the two clusters and close the hive.

"If the apiarist should desire to save one of the queens, he must secure and cage her with a few bees, if not, he need not trouble. A little syrup scented with peppermint, sprinkled over the bees before uniting, is said to prevent fighting. After having united two or more stocks it is as well to watch them for a while, and if fighting *should* take place, use the smoker freely to quiet them. In most cases two or three strong applications of smoke will effectually put a stop to any fighting, and make them live peacefully together."—*New Zealand Bee Manual.*

Queen Rearing.—To obtain good healthy queens it is necessary that the larvæ, from which they are to be reared, are supplied with an abundance of the milky food termed "royal jelly" from the time the eggs are hatched. With the exception of nature's method, *i.e.*, the swarming impulse, the following is the best plan to secure this: Place an empty clean new comb or a frame of foundation in the centre of the brood nest of the hive containing the queen you wish to breed from. Examine the comb each day, and note the date when the first eggs are laid in it. In three days from this time the eggs will commence to hatch into larvæ. Now go to a strong colony and take out the queen and all unsealed brood and eggs, and place the frame of selected eggs in the centre of the hive. The colony being deprived of all their own eggs and larvæ can devote their whole attention to the raising of queens from the eggs given to them. As the queens will emerge in 16 days from the time the eggs are laid, the queen cells should be cut out about the twelfth day and given to nuclei.

Forming Nuclei.—The nucleus hives being in readiness, go to a strong colony and lift out one or more frames until the queen is found. Place her with the comb she is on in a nucleus hive. Take out each comb containing plenty of hatching brood, and insert a queen cell securely. Place the comb with the adhering bees and queen cell in a nucleus hive. If there should not be sufficient hatching brood in the comb, put another one containing brood beside it. The remaining frame may contain honey or foundation. After inserting all the cells, close the entrances to the nucleus hives for 48 hours, taking care to allow plenty of ventilation. It is best to place the nucleus hives in different parts of the grounds, and away from the ordinary ones to prevent the young queens mistaking their hives when returning from their wedding trip. If the sun is strong, the nucleus hives should be shaded while the bees are confined.

Cutting-out and Inserting Queen Cells.—Care must be taken that the cells are not injured in any way when cutting them out. A thin sharp-pointed penknife is what we use for the purpose. Insert the blade of the knife in the comb a little distance from the base of the cell, and cut upwards and outwards for about two inches. This should be done on each side; now cut across, and you have the cell attached to a wedge-shaped piece of comb. A similar piece taken out of the comb you wish to insert the cells into will furnish an opening to receive it. The following engraving from the *New Zealand Bee Manual* will show at a glance how to insert queen cells.



A represents comb in which worker bees are reared. B, drone comb. C, capped honey. D, brood capped over. E, royal larvæ in queen cell just started. F, nymph (or embryo queen) in a cell completed, removed from another comb, and inserted artificially. G, queen cell with the side torn open by newly-hatched queen in order to destroy its embryo rival. H, queen cell from which queen has just hatched. I, stump of cell partly eaten away by bees. K, queen, surrounded by court, taking food from worker's proboscis.

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ARTIFICIAL SWARMING.—The best time to make artificial swarms is just previous to the time when natural swarming would commence. They may be made by the method given in the *N.Z. Bee Manual*, or by removing the queen and four frames of brood and bees to a new hive on a new stand, and introducing a queen or queen cell into the old hive from which the queen has been removed. It is better to remove the queen to the new stand along with the bees, as it tends to prevent so many returning to the old hive, as there would were the old queen not with them.

INTRODUCING QUEENS.—When honey is coming in freely, queens may be introduced with very little risk of losing them; at other times there is considerable danger, unless the bees are fed liberally. There are certain points which it is necessary to observe in introducing queens, in order to lessen the risk of their being destroyed. 1st: That all queens and queen cells have been removed from the hive. 2nd: That the queen before being liberated is permeated with the peculiar scent of the hive to which she is being introduced. 3rd: That she is introduced in such a manner that while being protected, the bees have an opportunity of becoming acquainted with her. 4th: If the bees are not gathering honey when the queen is being introduced, the colony should be fed.

A very simple introducing cage has been made by a Mr Alley, a prominent queen breeder of America, and given in his *Bee-keeper's Handy-Book* His method of making it is as follows:—"Take a block of wood, 3in. long, 2in. wide and ½in. thick, and bore through it a 1¼in. hole one-half inch from one end; then take a knife and cut a slot or mortise from the hole to the end of the cage (or block), being careful not to cut out more than enough to allow the bees to pass through after the wire-cloth is fastened on. Now cover both sides with wire-cloth; next cut a piece of tin, 1½in. long and ¼in. wide, and fasten it to the end of the cage not mortised, by driving a tack through the centre of it and into the cage.

"This is adjustable, and works on the principle of a a button to a door; and when it is turned crosswise, the cage will hang from the top bars of the frames between the combs, and thus will be held in position and prevented from falling down. This cage may be used in introducing both laying and virgin queens. The queen should be put in through the mortise-hole, which should then be filled (or plugged) with a mixture of sugar and honey; and in introducing, if the bees have been queenless three days the queens will be kindly received."

The principle of the working of this cage is that the bees liberate the queen by gnawing away the plug of honey and sugar. By the time that they have made their way into the cage they will have become friendly to her. In introducing virgin queens, the bees should have been made queenless three days before to ensure success.

PUTTING ON TOP BOXES.—If increase of stocks as well as honey is desired, the top or surplus boxes need not be put on until after the bees have swarmed. If all queen cells are cut out of each hive as soon as it has thrown off a swarm, and a fertilized queen introduced, the top box may be put on at once. Top boxes may also be put on the hives containing the swarms as soon as they are about three parts filled with honey and brood. In order to prevent as much as possible the queen depositing eggs in the surplus boxes, care should be taken to keep the combs in the brood nest clear of honey by extracting it, and thus give her plenty of empty cells below.

RETURNING THANKS.

ON behalf of the proprietor of this JOURNAL, Mr J. C. Firth, and ourselves, we take this opportunity to thank our numerous subscribers and contributors for their support, and also for their kindly and encouraging remarks in connection with the establishment of the JOURNAL.

We had somewhat anticipated that a Home Bee Journal would be welcomed by the bee-keepers of Australasia, but we certainly were not prepared for the very many warm expressions of appreciation and wishes for its success that we have been the recipients of. It is only due to the proprietor to say that he takes a very deep interest in the bee-keeping industry generally, and that directly the proposal was made to him to start a Journal he at once consented.

Starting and maintaining a Journal of this description entails a very large amount of expense; and as the subscription list is the principal means of meeting it we would ask our present subscribers to do their best to obtain new ones. If each obtain only one new subscriber it would materially assist us. We will willingly send a few sample copies to any one for distribution amongst bee-keepers in their district who have not already had a copy.

We are sorry to say that our endeavours to obtain a reduction on the foreign rates of postage of the JOURNAL have proved fruitless.

COMB FOUNDATION IN SECTION BOXES.

No doubt it will have been noticed by those who have raised comb honey in quantity that the boxes are not uniformly filled. Many of the 1lb boxes vary in weight as much as a quarter of a pound; some weighing a trifle over a pound, while others weigh but very little over three-quarters. This is due to the use of starters only in the sections instead of full sheets of foundation. Since the introduction of foundation with an extra thin base, full sheets are used in America where their use was once strongly condemned. There is also another advantage in filling the sections with worker foundation; bees, as a rule, build drone comb in the sections below the starters, and this is an inducement for the queen to deposit drone eggs in them, the space being limited for breeding drones in the brood nest. We would therefore recommend the use of full sheets in the place of starters. We are cutting our thin comb to sizes so that our customers may have no waste, viz.: 12in x 3⅞in., and 16in x 3⅞.

AN ABUNDANT HONEY HARVEST.

WE are pleased to learn that the honey harvest in both England and America during the season just closing, has been very good indeed. Extraordinary accounts are given in the various bee journals of the immense yield from white clover in both countries. Let us hope that we may have the same to record for Australasia at the close of the coming season.

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DRIVING AND HIVING BEES.

BY T.J.M.

The description of his "hiving tray," given by Mr Smith in the August number of the Bee Journal, induces me, especially as the swarming season is now near at hand, to mention and recommend for adoption a simple apparatus which we have used for the last two years at this apiary for all purposes of hiving bees, whether taken as natural swarms or driven from other hives or boxes. The necessity of performing the latter operation with several old box hives, and conveying the bees a long distance upon horseback, was the "mother" of this little invention, if I may call it so. A friend living some nine miles distant, who had kept a number of box hives, and who was about to remove, and to give up bee-keeping, offered us the bees if we would drive them, and thus save them from the sulphurous death to which they were otherwise destined. My son gladly accepted the offer, and having given some consideration to the difficulties of driving bees from boxes of various sizes and shapes, conveying them a long distance upon horseback, and then introducing them into a hive of larger dimensions than any of the old ones, he prepared a case such as I shall now describe, which was found to answer its purpose admirably, and which we have always used since, and found equally effective and convenient for taking and hiving natural swarms.

It consists of a light box (of half-inch wood) of any convenient size, the top being open, and the sides *continued* as it were by an open sack of light canvas, about two feet long, bell-mouthed shaped, one end being made to fit the top of the box to which it is permanently tacked, and the loose end being so much larger as just to fit over a Langstroth hive. In each end of the box a round hole of about three inches diameter is cut, which is covered with a piece of perforated zinc nailed on the inside; a strap handle is nailed on the outside of the bottom board, and the case is complete. I have said that the box may be of any convenient size, *i.e.*, to hold a good swarm; but I would recommend, if a new box be made for the purpose, that its length should be fifteen inches outside, so that it may just rest crossways upon a Langstroth hive when uncovered; the width and depth need not be more than nine or ten inches. The exact weight of the empty case (which need not exceed six pounds) should then be ascertained and painted on the side of the box.

In driving bees out of old boxes, after giving them a little smoke, the box is turned upside down; the mouth of the sack being drawn over the open bottom thus exposed, can be folded so as to fit the opening (whatever may be the size of the box), secured in a temporary manner to the sides by small battens placed over the canvas and tacked with light nails, which need only be driven a little way into the wood, so as to prevent the passage of bees at any part. The case is then suspended by the strap-handle from some temporary fixture over the hive, so as to keep the canvas walls stretched, and the bees are driven in the usual manner. They can be seen through the canvas travelling up into the box, and when there, can be conveniently observed through the perforated zinc air-holes. When all is right the box is loosened and set on its bottom, the mouth of the sack taken off the hive and gathered in one hand, any bees that may have remained on the canvas walls shaken into the box, and the sack then tied with a piece of cord as near the mouth of the box as practicable. The case can then be carried by the handle for any distance, on foot or on horseback, or laid (canvas side upward) on any mode of conveyance without inconvenience to the carrier or injury to the bees.

The new hive into which the bees are to be introduced may be placed in its intended position in the apiary, completely fitted with frames of worked comb or of comb-foundation (of course, all the better if one or two of the frames contain sealed honey, or honey and brood), and when the cover and mat are removed the mouth of the sack is to be fitted round the top of the hive itself, or an empty super may be put on, to which the sack is to be attached. I prefer the use of the super as more convenient in many ways. The string can then be taken off the sack and the bees gently shaken in on top of the frames in the hive, the entrance to which should be stopped with a piece of perforated zinc or filled loosely with cotton wadding, so as to confine the bees without excluding air. The box mouth may then be rested crossways on the top of the hive or of the super, as the case may be, and a little time allowed for the queen and the other bees to settle on the frames. Their motions can be observed through the air-holes in the box, and as soon as they have settled the mouth of the sack may be loosened from the hive; or, if a super be used, the box, sack and super all removed together, the mat and cover placed on the hive, the entrance made free, and the bees left to commence operations in their new home.

If a natural swarm has to be taken, either close to the apiary or at any distance from it, the process of securing the bees will be found to be very easy, no matter in what shape the cluster may have settled. The mouth of the sack being held close under, or quite surrounding the cluster according to circumstances, the bees can be shaken or brushed in with the least possible amount of risk of injuring or losing the queen. The work of introducing the swarm into the new hive is of course the same as with driven bees.

Before proceeding to hive the bees, the case should be weighed, and the exact weight of the swarm ascertained by simply deducting the weight of the empty case which is marked on the side of the box.

The use of this hiving case may be recommended on all the following grounds:—

1st. Its simplicity and small cost.

2nd. The facility it affords for driving bees out of boxes of any size or shape, and of taking natural swarms under all circumstances.

3rd. The convenience and security with which the bees can be carried any distance, and by any mode of conveyance.

4th. The accuracy with which the weight of the swarm can be ascertained.

5th. The ease and celerity with which the bees are introduced into the new hive already fixed in its definite position, and fully fitted up with frames in any desired manner.

In a large apiary any required number of these hiving cases can be kept in readiness to take several swarms which may come off in one day, enabling the bee-keeper to hive them at leisure either on the same or following day, and either separate if the swarms be large enough, or united as may be desirable with weak or small after-swarms.

Bayview Apiary, September 1883.

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[The swarming and driving-box described by T.J.M., is a very simple, but ingenious, contrivance, and for carrying swarms a distance in, we cannot imagine anything better. The description comes very opportunely, as the season is fast approaching when appliances of this kind are needed.—Ed.]

APPLIANCES FOR THE APIARY WORKSHOP.

It is a matter of great importance to those making up a quantity of material each season for the apiary to have in use all the labour-saving appliances possible. We have several of these appliances in our workshop which, as well as saving time and labour, assists us considerably to do our work accurately. A short description of them will no doubt be of service to those in need of such things.

We must first state that all our material is cut by machinery.

Hive Cramp.—This is a machine for cramping the four parts of the body of the hive together, and holding them square and firm while nailing them. It is made by taking four pieces of timber 6in x 2in three feet long for uprights, and two 4in x 3in five feet six inches long for horizontal pieces to form the platform and to bolt the uprights to. Two uprights are halved into each horizontal piece two feet ten inches apart, and sixteen inches from the upper ends of uprights. These two parts of the framework are held parallel to each other six inches apart by two pieces of 6in x 1in let in to the horizontal pieces. Two ⅝in iron bolts run through the double part of horizontal and upright pieces with a nut and screw hold all firmly together. The uprights and horizontal pieces should be exactly at right-angles to each other. Two 4in x 3in four feet six inches long should be fastened to the bottom ends of uprights, and spreaders placed between; these hold the uprights firm when screwing the parts of the hive together. If made correctly, when the frame is standing erect, the platform formed by the 4in x 3in pieces should be exactly the width of a hive (16in) below the upper end of uprights.

The next things required are the two jaws, one stationary and the other movable. To make the stationary jaw, one pair of the uprights are made use of. To these are screwed two pieces 1½in square, one at the top and one close down to the platform. If thought necessary a stay may extend from the back of each upright to the ends of the horizontal pieces. For the movable jaw a piece of 9in x 2in sixteen inches long is required. A carpenter's wooden bench screw is made to work between the other pair of uprights by fastening the screw-block between them. The end of the screw is now fastened to the movable jaw in the usual manner. To steady the jaw when screwing up, a short piece of inch board is nailed on the bottom which slides between fillets nailed between the horizontal pieces; this forms the cramp. When working it, we place one side of the hive on the platform between the jaws; next, the two ends are placed in their proper position, then the remaining side; we have now only to give the screw a turn and all the parts of the hive are cramped together close and held firm and square while nailing them. When one side is nailed the screw is loosed, the hive turned over, and the other side nailed in the same manner. We may here remark that we always nail our hives on the sides, and never in front. We use 2½in wire nails for this purpose, three to each end. We also use our cramp for putting the four sides of the covers together.

Cramp for Section Boxes.—This is a very handy, simple, and useful appliance for cramping dovetailed section boxes together. Ours is formed by making a base or bottom board 5in wide, 18in long, by 1in thick. On one end of this is nailed securely a piece of 3in x 2in four and one-quarter inches long, the length standing perpendicular. To this block is hinged, by a strap hinge, a lever about two feet long, made of a piece of 3in x 1in batten, the end being tapered down to form a handle. Another small block exactly the same size as that nailed on end of base board, but which may be tapered on the back, is nailed on under side of lever a bare 4¼in from the other block. The cramp is now complete, and if made according to the instructions given a section box will barely go between the two blocks when the lever is down. To use it we first put the sections together by hand, then place them one at a time under the lever against the block on end of base board with the left hand, then with the right hand bring down the lever; this forces all the pieces into their places securely.

Clinching the Dovetails.—To finish the sections and make the joints strong we clinch the dovetails. For this purpose we have a small form, made by nailing two pieces of 3in x 2in four inches long on a small board 4in x 1in one foot in length. The two blocks are nailed just far enough apart to allow a section box to slide between them easily. This form is for steadying the sections and keeping them square while clinching. To clinch, we slide a section box into the form and tap down the ends of the dovetail at each corner with a hammer; this operation makes a firm joint.

We had written the above before receipt of Mr L. J. Bagnall's paper on "Hints on making up hives in the flat," given in another column.

HINTS ON MAKING UP HIVES IN THE FLAT.

BY L. J. BAGNALL.

Most people will find it cheaper and better to buy their hives "in the flat," that is, cut to length, size, and shape, ready for nailing together, and many are now being sold in this way. It is important that care should be taken in putting them together, so that the best results, both in utility and appearance may be obtained, and no bee-keeper should be satisfied unless he can obtain both of these in his hives.

To put the bodies together two frames made of wood or iron are very serviceable. The former may be made very easily out of pieces of 2in x 2in halved at the corners and strongly nailed together. They should be perfectly square, and of a size to admit the parts of the body without much trouble. A few thin wedges will drive them tightly together. Adjust the frames so that the nails may be driven without removing them. Persons who have many hives to make up could fix a frame on a stand and press the parts together with a bench screw.

Before wedging up tightly see that the upper outside rabbit is even all round, then keep all firmly together and nail securely. Two-inch wire nails do well for bodies and bottom boards. Be careful not to split the wood or let the points of the nails come out.

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Punch the heads well in. This is very essential, so that they may be puttied up, to keep the wet from rotting the timber.

The roof requires particular care in putting together, as it has to keep out the rain; dampness being very injurious to bees at any time, but especially in winter. Keep the sides and ends square and even. One of the frames before mentioned may be used for this purpose. Place the ridge piece in the centre, allowing it to project an equal distance at each end; fit the covering pieces closely up to it, and nail all securely together. One and a-half inch wire nails do for the cover, except those which require to go in the corners and ridge-piece. Use 2in for these. If the lower edge of the bodies or roof show any unevenness dress them off with a plane.

Having your hives all nailed together, and the nail heads punched in, you are ready to start painting. For a first coat use white and red lead and raw linseed oil. If dryers are used let it be sparingly, and do not have your paint too thick for the first coat. No colour is so good as a pure white for a bee hive, and none looks so well; but white paint does not stand the weather well. The very best white lead seems to wash off as readily as the inferior. To prevent this other colours are sometimes added. I have found the Californian white rubber paint answer well, and use it in my own apiary. Each person can please him or her self as to the shade of colour. Always remember that the whiter your hives the cooler they will be in summer: a very important consideration where they are exposed to the sun's rays. After the first coat is quite dry carefully putty up all the nail holes and any little crevice there may be where the ridge and covering-pieces meet. Two more coats of paint of the approved colour should be given them.

While the paint is drying you can put the frames together. This should not be attempted without a "frame form." With it there is no trouble or loss of time; without it it is impossible to put frames together satisfactorily. Use 1in wire nails, putting two at each corner of the frame. When the hives are all made up and painted they can be either placed in position in the apiary, or in some convenient place, to be ready when wanted.

These hints apply more particularly to the Langstroth hive and frame, first supplied in New Zealand by Mr Hopkins, and now by his successors, Messrs Bagnall Bros. & Co., but will also apply in a good measure to the hives made by other makers.

Turua, 28th August, 1883.

[With regard to hives painted a pure white, our experience corresponds with that of Mr Bagnall—*i.e.*, that the best white lead will "chalk off"—as the painters term it—as readily as the inferior kind, after being exposed to the sun's rays for a short time. We have found that if a little black is added, so as to make the paint a light slate colour, it will stand at least three times as long.—Ed.]

Bees Assist Nature.—Bees assist in the fertility of flowers by distributing their filaments and causing the distribution of pollen; they are important requisites to a full crop of fruit.

Bumble bees are wanted in New Zealand to fertilize clover bloom, in order that clover seed may be produced. The bumble bee, as well as the honey bee, is an important auxiliary in nature.—*Exchange.*

APICULTURE IN QUEENSLAND.

BY C. FULLWOOD.

The prospects of apiculture in this semi-tropical climate can scarcely be gauged by past experiences, seeing that those experiences have been but limited in extent, and the progress of colonization and settlement, with the consequent destruction of scrub and bush will materially change the character of the country as a field for honey-gatherers.

There is no doubt that there are a large variety of honey-producing plants, trees, &c., indiginous to Queensland from which, throughout the year, large quantities of honey may be gathered of an excellent description. Yet it is a fact that the great flows of honey that America boasts, and New Zealand may yet claim, will never likely be realised here.

Except in very wet seasons, bees gather all the year round, the winters being so mild that breeding and honey-gathering rarely ceases. The incoming is more regular, spread over a longer term, but probably will rarely ever be so large as in many other places.

Still, in well-chosen localities, apiculture may be made a very profitable business in Queensland, especially if a ready market, at fair prices, can be found for the sale of the stores.

The fact that one or two families already manage to obtain a respectable livlihood from their bees will be sufficient proof that, with Italian bees, modern appliances, and skilful handling, success, bringing comfort and satisfaction therewith, should attend the steps of the modern bee-keeper, who, determined to overcome obstacles, creates a supply and a demand through the mode of raising and presenting the supply. Very little has yet been attempted in the way of presenting honey in an attractive form, the expense of tins and jars being regarded as prohibitory.

In the early days honey was so plentiful that it was brought to town by the farmers and others in kerosene tins, in the roughest and readiest manner, and sold for a very trifle, so that a fair price is even now regarded as too costly—although it must be presented in better form. When clear, well-shaped jars, and nice tempting sections can be placed before the public no doubt an increased demand will arise, and better prices be obtained than hitherto.

With the common bee the prospects of apiculture in Queensland are gloomy; the moth clears them out wholesale, but with Italians, and possibly Holylanders, a brighter future looms before us, giving impetus, energy, hope.

This is a grand country for multiplication of stocks; from mid-August to mid-April bees will swarm. An old bee-keeper told the writer the other day that soon after settling on an allotment just out of Brisbane some years since, he found a swarm, put them in a box, and in a short time they swarmed, and the swarms swarmed, until the one in the same season became eleven.

Brisbane, August, 1883.

It is said that 3660 workers will fill a quart measure.

Drones v. Bachelors.—It is said by some naturalists that drone bees are a slandered race, that they are not idlers, but nurse and take care of the baby bees. Can as much be said of old bachelors?

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(For the N. Z. and A. Bee Journal.)

All correspondence must bear the name and address of the writer, not necessarily for publication, but as a guarantee of good faith.

MARKETING HONEY, ITALIANIZING, &c.

Sir,—Since my last report we have had two of the finest winter months I ever remember to have seen. Bright sunny days, sometimes quite hot; my thermometer marked 90° in the sun one afternoon. With such weather the bees could not fail to thrive, and my eighty colonies, although deprived of rather too much honey in the autumn, are coming well through the winter. I am somewhat dissatisfied with my location from a honey-producing point of view. I have plenty of flax and a a good deal of bush within reach, but clover is sparse. I have arranged to move a few miles to a place where honey of all kinds should be plentiful. I was much disappointed by the returns from England of a small trial shipment sent there. One hears so much about the fabulous prices given for honey at Home that I thought I would send Morton, the provision dealer, a sample keg. The honey was sold at auction, and fetched 30s a cwt. I have had no account sales, but as the keg cost 6s, and freight was 10s, by the time commission and other charges are added I should not be surprised to get a dr. note for deficiency. It seems there is a craze for white honey, and no other kind will sell. It was flax honey I sent, and the report on it was, "The honey is of a dark colour, and somewhat burnt flavour." Unfortunately, I sent a ton later on, partly flax, partly clover, and not knowing the necessity of grading the honey I mixed the tins, and could not tell which was which when I came to pack them. I am afraid it will all be sold as "honey of a burnt flavour." Well, *experiencia docet*. Not much danger of falling into the same mistake again. I am glad we colonials have not such fastidious palates. A case of the same honey in 28lb tins sent to Nelson fetched 6d, and I got 8d for all I sold in 1lb tins.

Will Mr Karl say how he marked his 2000lbs of comb honey—was it put up in glassed crates or how, and was any of it shipped by steamer, and with what result? I am told that a case of Mr Knight's honey, in 5lb glassed boxes, shipped to Wellington, arrived there in fragments. I am making up 1lb sections now to turn out my thick spring honey in the comb. In fact I see no other way of securing it. As Mr Karl says, it is impossible to extract flax honey.

I am delighted with what he says of the Ligurian bee, and will endeavour to Italianize all my apiary during the coming season. Mr Adams has sent to America for queens, and expects them in October or early in November. He imported a full colony last year, but they were all dead when they reached Gisborne.

In a recent number of the *American Bee Journal* I read a plan of preventing increase, which I shall try next season. A swarm issuing from hive No. 1 was secured in a new hive, and placed on the old stand. All the bees were shaken from the combs of the old hive and flew into the hive with the new swarm. The queen cells were then cut out, and the next swarm hived among the unhatched brood. By this process no increase was made, and the hives were kept very strong.

I notice some of my queens are beginning to lay, and the bees are bringing in pollen from acacia. The weeping willow, which abounds in this district, will soon begin to shoot, and then honey comes in pretty freely. We have had some stiff frosts lately, and grass is rather scarce on the flats.

I hope to see some account of the Matamata Apiary in the next number of the Journal.

George Stevenson,
August, 1883. Ormond Apiary, Gisborne.

[We are sorry that our correspondent has been disappointed in the returns from his trial shipment to England; but we certainly think he has himself to blame in a great measure for his disappointment. He should have known if he had perused the Bee Journal he subscribes to attentively, that it is useless to put an inferior grade of honey on the English market with the idea that it will pay. First-class honey will sell readily in England, and fetch a good price; but sending a poor article will only result in loss to the sender, and tend to give New Zealand honey generally a bad name. With regard to neglecting to grade the second lot of honey sent, we think our correspondent has been remiss, as our Manual—which he has—distinctly states that this should be done. We hope and expect to find New Zealand honey in demand in the English market; but the demand can only be created by sending a first-rate article, which can be produced here abundantly, and with as little cost as the poorer kind.

An account of the Matamata Apiary was published before we received our correspondent's letter. We had nothing of importance to add to that given by the "Auckland Weekly News" of last February; but we shall keep our readers posted in all our doings from time to time, and give them the benefit of our experience in every department of apiculture.—Ed.]

THE JOURNAL.—MR DOOLITTLE'S AVERAGE.

Sir,—The first number of the Journal has come to hand, and I must say it is a great credit to you. I did not expect to see a Bee Journal equal to this for the next ten years to come. If this is a sample of what we are to get every month, there is a treat in store indeed. Every person who keeps bees should subscribe to this Journal, and also give their contributions towards it. I sincerely wish long life to it, and also financial success.

Mr G. M. Doolittle gives, in the *American Bee Journal*, his account with his bees for a period of ten years. He says, "That a report of a very prosperous year is often misleading, but one extending through a period of ten years should approximate very nearly to what might be expected for the same length of time to come. His average yield for each colony in the spring of 1873 was 80lbs; 1874, about 100lbs; 1875, a little over 106lbs; 1876, 50lbs; 1877, a little less than 167lbs; 1878, 71lbs; 1879, 58lbs; 1880, 62lbs; 1881, nearly 135lbs; 1882, it was 51lbs—making an average yield for the past ten years of 88lbs per colony; five-sixths of this was comb honey. The average price at which it has been sold is

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about 10d a pound; give 73s 4d average cash yield for each colony. Hence, if a man is capable of keeping 50 colonies the income would be £183 a year; if 100 it would be £366. After an experience of fourteen years in the bee business he can see no reason why it does not compare favourably with any other pursuit in life as far as pounds shillings and pence are concerned; and when one looks at it as a fascinating and health-giving pursuit it places most other avocations in the shade."

Westport, August 4th, 1883. J. Barkley.

FOUL BROOD.—A WARNING.

Sir,—It was with great pleasure I received the first number of your Journal. I consider the promoters are entitled to the thanks of bee-keepers for their enterprise, and I only hope they will be rewarded with a large measure of support.

I wish to call the attention of all bee-keepers in this island to your reprint of Mr Muth's paper upon Foul Brood. That scourge of the apiary is rampant in all parts of this provincial district, several apiaries having been entirely depopulated by it; it has spread to the west coast of the Island, and last summer I detected its existence a considerable distance along the Taupo Road, so you will need to have your eyes open at Matamata.

After twice losing my own bees, I wrote to Mr Muth for a copy of his paper, which he kindly forwarded. I found his system efficacious; but with neighbours within a few miles capturing absconding swarms, and putting them into infected boxes, I have to be continually upon the watch; and every now and then all the combs in a hive have to go, and the hive to be boiled and disinfected.

My bees did well last year. Though having been away for three months of the honey season I lost a great deal of honey. I found what you call 1lb sections from the Italians averaged 2½oz more in weight than the same sized sections from the blacks. Is this the rule? In my case I keep the Italians about five or six miles away from the blacks, so the extra weight may be owing to location, though in both cases the principal source of honey would be white clover.

My experience as to Italians does not bear out the general verdict as to mildness of temper. I can always manage the blacks without smoke, but the first time I tried it upon Italians I found they had stings—and could use them. I had tied my horse about twenty yards from the stand, but I soon heard a snort and a crack and then a sound of rapid galloping over the turf. Since then I prefer to use smoke with the Italians. Fearing I am trespassing,

I remain, yours, &c.,

R. Harding,

Mount Vernon, Hawke's Bay.

August 13th, 1883.

[We are very sorry to hear of the existence of foul brood in your district, and would advise all bee-keepers thereabout to do their utmost to stamp it out as quickly as possible; and in the meantime to do their best to prevent it spreading. We are pleased to hear that you found Mr Muth's remedy efficacious, as it is so simple that any bee-keeper can apply it immediately he perceives any symptoms of the disease amongst his bees.

With regard to Italians putting more honey into sections than the blacks, that *is* the case. Italians fill all honey cells fuller. The blacks leave a considerable air space between the honey and the cap of the cell, whereas Italians leave little or none; for this reason blacks are preferred by some for raising comb honey, as the face of the comb looks much whiter.

With regard to handling Italians we find them as a rule much more gentle than the blacks; but if once aroused they are likely to do their best to beat off the intruder. In all manipulations be careful not to jar the hives or frames.—Ed.]

DRONE TRAPS.

Sir,—I have just read your *Illustrated New Zealand Bee Manual* (1881 edition). I have read several works on bee-culture, including German and Italian works, but yours is by far the most practical and useful I have ever read, especially for beginners, and I think that no person who takes any interest in bee-keeping ought to be without it.

I wish to call your attention to a drone trap, not mentioned in your *Manual*, which is in general use in the apiaries of my country—Canton Grison, Switzerland, where great interest is taken in bee-culture. This trap is much like some wire mouse-traps, except that it is rectangular instead of round; size, about 4½ x 4½ x 3in high. An entrance is made on one side where some of the wires, sharply pointed, are turned in towards the centre of the trap, and end in a small circular opening large enough to admit drones readily. When in, the drones are prisoners, they being unable to find their way out again. Of course, the wires of the trap are set far enough apart to allow worker-bees to pass through between them with ease, but sufficiently close to prevent the drones passing. If the opening of this trap is placed over the entrance to the hive the drones, on emerging, will enter it, and so be made prisoners, while the workers can escape without trouble. The bottom of the cage is generally a thin piece of board which is made to open in order to shake the drones out after drowning them.

Excuse me for treating so long on this subject, as it could be done in fewer words, but English is not my native tongue. Yours, &c.,

H. Schumacher.

Inglewood, Taranaki, August 12th, 1883.

[We are much obliged to Mr Schumacher for calling our attention to what appeared to him an omission on our part.

The reason drone traps are not mentioned in either edition of our *Manual* is because, under scientific bee-management, they are not required. With the aid of movable-comb hives, and artificial-comb foundation, the breeding of drones is entirely under the control of the apiarists. It would simply be anything but scientific management to allow the breeding of non-producing drones more than were actually needed, as this would be a useless expenditure of time on the part of the queen and nurse bees, and a waste of honey and pollen.

Drone excluders are sometimes used by extensive queen breeders where two or more varities of bees are kept in the same apiary. These are used to control the

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mating of the young queens, by placing the perforated zinc over the entrances to the hives, from which the breeder does not wish the drones to fly. The perforations are large enough to allow the workers to pass in and out of the hive.—Ed.]

PROGRESSING.

Sir,—Only a fortnight before I received your Bee Journal—for which please accept thanks—I was talking about my numerous wants in the bee line, some of which would have to be curtailed. I, nevertheless, concluded that a bee journal must be got. I have decided to become a subscriber, to see if it will supply information of a somewhat different character to that supplied by bee books—I already possess your *Manual*—and, if so, will continue to support it. The questions asked and answered, I have reason to believe, will be worth the money alone.

I see you have answered my questions, though I have answered them myself by experience. I have made rapid strides since I wrote you, having transferred five stocks successfully from common boxes into Langstroth hives, united two others out of boxes, and given them comb foundation. I bought 12lbs, also an extractor, and from 10s worth of honey, as I wrote you last, have got to £1 worth, besides having plenty for family use. I got all tools necessary to make my own hives, as I find the freight adds considerably to the cost of hives obtained from a distance. I have been muddling with bees for the last twenty years, and have made more progress this year than the rest of the twenty put together. I have terraced a hill side in two rows to contain 30 hives, with plenty of room for extension. There is a fine range for bees, surrounded by bush and well sheltered. I have dug the ground in front of the hives a half chain wide, and planted it with beans, as I find the bees are very fond of them. I lost two swarms through being concealed amongst some cocksfoot I had growing for seed. They alighted on a peach tree branch, their weight dragging it down amongst the cocksfoot. I first perceived them when taking their final departure; of course, you know the state of feeling that ensues. I am ashamed of my last letter, showing my ignorance on bee-matters, but if it is only a mark to show where I have progressed from hereafter, I will be satisfied. People tell me I have "bees on the brain."

R. Henderson.

Silver Hill, North Oruawharo, July 27th, 1883.

[We congratulate you on the progress you have made since you penned your last letter, published in our first issue. "Bees on the brain" is is a common complaint amongst successful apiarists.—Ed.]

THE JOURNAL.—TRANSFERRING.

Sir,—I am very pleased that you have started a Bee Journal, and I am sure all bee-keepers in New Zealand will appreciate your efforts and become subscribers. A copy was forwarded to me, and all I have shown it to have or will become subscribers.

I am transferring the few colonies of bees I have from the "Woodbury" to "Langstroth" hives.

Nelson, August 17th, 1883. B.S.C.

FROM GEELONG.

Sir,—I have received the first number of the N.Z. and A. Bee Journal, for which I thank you. You will kindly include my name amongst your subscribers.

I began two years ago with a single hive, now I have eleven strong stocks; they have wintered well. I have not much time to look after them or I could have done much better. The bees are an amusement, and a sort of hobby of mine, yet I am anxious to adopt the most approved plans. After many experiments I have adopted a hive of my own, which I find answers admirably. I have eight hives upon this plan, and three others various; the latter I intend to transfer in the spring, so that everything in the apiary, frames, hives, covers, &c., shall be interchangable.

The great difficulty I have is this—the bees are furious on all occasions, smoke seems to have no effect upon them, so in all manipulations I am obliged to be altogether bee proof. Whether it is my awkwardness, or the innate dislike the bees have to their best friend, I know not; perhaps you could tell me? I wish you every success, and shall not fail to make known to you all my difficulties, and report to you my success.—Yours, &c.,

W. J. Thomas.

Geelong, July 31st, 1883.

[We are much obliged to Mr Thomas for his report, and promise of future ones.

We do not think it is the innate dislike of the bees to you that makes them so irritable, but believe that you may occasionally jar the hive when manipulating. We would advise you to blow a good puff of smoke into the entrance a minute or so before you remove the cover. This will frighten the bees, and cause them to fill themselves with honey, when there will be little danger of receiving stings.—Ed.]

STIMULATING AND PLANTING FOR BEES.

Sir,—There is every appearance of a very early spring in this district; the willows are already quite green, and on the sunny days the blue gums are loud with bees. My queens are most of them laying a little, and I intend this week to commence stimulative feeding, giving a small quantity of syrup every night over the cluster by means of tin feeders, as described in the A.B.J. for April 4th, 1883, page 181. I have fenced in three acres round my apiary, and have planted therein fruit trees, a lot of gooseberries and raspberries, thirty five-year-old linden trees (*Tilia Europœa rubra*), obtained from Mr Mason, of Parnell. I put in these latter as being the nearest thing I could get to the American basswood. The trees are particularly well grown, neatly specimens, and I think should yield me a good honey harvest within a few years time. I have still plenty of space for honey plants within the enclosed piece, and am anxiously awaiting your advertisement of

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figwort and melilot clover seeds. When should I sow these and spider plant, of which latter I have some seed?

E. D. H. Daly,
Woodside Apiary, Hautapu,
August 20th, 1883. Waikato, N.Z.

[We are glad to hear that in planting you have chosen trees that will be useful to your bees, as well as ornamental to your property. Honey plant seeds may be sown any time after frost is over. We cannot supply any figwort or mellilot clover seed this spring. We have a small supply of seeds of spider plant to dispose of; see advertisement.—Ed.]

PREPARING FOR THE COMING SEASON.

Sir,—I must congratulate you on the general appearance of the Bee Journal. It is, I consider, very well got up indeed, and I am very well pleased with it.

We are very busy getting ready for spring work. We have just finished nailing together 270 boxes. We are going in for extracting entirely this season. I should like very much to have one of those eight-comb extractors spoken about on page 16 August number of the Journal.

J. Karl.

Ohaupo, August 21st.

[We expect to receive our six-comb extractor in about a week, when, as promised, we will give a detailed description of it in our next issue.

We shall be glad to receive monthly reports from Mr Karl for publication, if he can make it convenient.—Ed.]

We are in receipt of several communications from our correspondents, which arrived too late to be inserted in this issue, but will be published in our next.

FROM OUR CONTEMPORARIES.

EUROPEAN HONEY AND WAX IMPORTATION.

Some time ago we noticed an item in an English paper that, at a sale in Lisbon, Portugal, *sixty tons* of beeswax had been sold. This shows what an extensive sale and use it has in Europe.

The *Deutscher Bienenfreund* for May contains a table showing the amount of honey and beeswax received at Hamburg from foreign countries during 1881 and 1882. The amount of honey was as follows, from

		1881	1882
Havana	lbs	550,060	525,000
Mexico	„	1,100,000	835,000
Chili and Peru	„	1,320,000	1,105,000
California	„	48,000	—
Domingo	„	450,000	270,000
Total		3,468,000	2,735,000

Of beeswax the amounts received were as follows, from—

		1881	1882
Chili	lbs	90,000	54,000
Venezuela	„	145,000	63,000
Angola	„	14,000	—
Madagascar	„	48,000	33,000
West Indies	„	38,500	12,000
Total		335,500	162,000

Honey is extensively used in Europe in the manufacture of honey wine, metheglin and cakes; for preserving fruit, and preparing medicine, as well as for table use, for which it is more generally used than in America.

One firm (Messrs Field and Co.), in Paris, use ten tons of American beeswax per month in making candles for Catholic altars. The religious pageantry of Roman Catholic countries owes much of its splendour and influence to its altar candles, each the tribute of a thousand flowers, collected by millions of bees, leading the thoughts back, perchance, to the sweet and pure origin. Its other uses are very numerous and important. The New York *Grocer* enumerates the following: Its property of preserving tissues and preventing mold or mildew was well known to the ancients, who use serecloth for embalming, and wax for encaustic painting, as in the wall pictures of Pompeii. Wax candles and tapers play an important part in the processions and ceremonies of the Roman Catholic Church. Wax is used by manufacturers of glazed, ornamental wall papers, and on paper collars and cuffs for polishing the surfaces. It is used in varnishes and paints, and for the "stuffing" of wood which is to be polished, as pianos, coach work, fine furniture and parquette floors. Electrotypers and plasterers use wax in forming their molds. Wax is an important ingredient in preparations for covering surfaces of polished iron and steel to prevent rust. Combined with tallow, it forms the coating for canvas and cordage to prevent mildew, as in sails, awnings, etc. Artificial flowers consume much wax, and despite the introduction of paraffine, ceresin, and mineral wax, its use appears to be extending. One of the oldest of its applications is in the laundry, and in polishing wood-work.—*American Bee Journal*, June 13, 1883.

BEES AND FLOWERS.

Bees and flowers, says Mr W. Ingram in the *British Bee Journal*, are inseparably connected. Associated in sentiment, it was assumed that the nectarous flowers gave their sweets to the insects in perfect freedom, and out of their abundance; but modern teaching has satisfactorily shown that the benefits conferred are reciprocal, that while the bee gathers the floral sweets, flitting from flower to flower, it effects an important purpose by carrying the pollen-grains from one plant of the same genus to another, and, by thus effecting cross-fertilization, secures to the plant prolonged vigor and vitality in its progeny.

Amongst the multitude of plants that adorn our gardens and brighten our fields and wastes, there are some that are especially sought out by bees as affording them the best and purest food; and coincident with the extension of bee-keeping, endeavours should be made in each locality to ascertain the relative value of honey-yielding plants, either native or exotic, and to increase them in due proportion. When nature has been so prodigal it may seem to some a needless and unnecessary labor, but it will not be found so. It must be remembered that large numbers of useful bee-flowers have been banished by the plow and the spade. Native plants are weeds to the farmer, and more highly cultivated the district more restricted and poor becomes the bee-flower. One proof of the value of wild-flowers is,

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that bees are observed to store honey more abundantly when in easy reach of rivers and brooks, on whose banks waste land, native plants grow in undisturbed freedom.

There is, however, compensation in some highly-managed districts, especially where large areas of turnips are grown for seed, or the different kinds of Brassica, or mustard, or other cruciferous plants, occupy the land. The bean-fields in their season afford great supplies of honey; and meadow and pasture land, rich in white clover, give an opportunity of adding greatly to the luscious store of the bee. But there are seasons when such sources of obtaining food are unavailable; and it is to fill up the intervals between the important field crops I have mentioned, and to secure an uninterrupted succession of flowering plants from which bees may profitably derive their food, that our efforts should be directed.

Cultivating an extensive collection of hardy plants, and having devoted some little attention to those kinds that seem most attractive to bees. I hope to be of service to my bee-keeping friends by giving, in each succeeding month, the names of the most useful bee flowers, with some instructions with regard to their mode of propagation and cultivation, so that in time we may fill up the little flowerless intervals with honey-bearing blossoms.

The weather that invites the appearance of early flowers influences the bees, which are glad of the opportunity of leaving the hive for a short circleing flight as soon as a few gleams of spring sunshine vivify the air, and we may be sure that the few vernal flowers that present themselves are welcome, and immediately visited. The first to appear are the following:—Eranthus hyemalis, Helleborus niger, and H. orientalis, the Snowdrop, Tussilago fragrans, the Russian violet, Crocus imperati, and with the shelter of a wall the winter Honeysuckle, Chimonanthus fragrans, Jasminum nudiflorum.

Although all these are interesting and useful, especially to the amateur gardener, there are few aparians, perhaps, who have the space and opportunities for planting the whole of them. There are two, however, which would repay their introduction in the immediate neighborhood of bees, these are Eranthus hyemalis and Helleborus niger—plants of easy growth and of hardy constitution—the flowers of which are eagerly sought for by bees on their first flight in the opening spring.

Those who are interested in providing honey-yielding plants for the early months of the year, and have failed to make plantations, may still do so in the case of the following eminently useful kinds:—Arabis albida, Aubrietia græca, Wallflower (the early yellow variety is the best), Erica carnea, Limnanthes Douglasii. In all cases for blooming purposes the same season, rooted plants should be put in. To rear plants for another season, slips or cuttings or seed may be set or sown later in the spring.

An editor, after spending half a-day in his apiary, returned to his sanctum, his face all a-glow with a "brilliant idea," and wrote an article on "How to handle bees without being Stung." While reading the proof in the evening he felt something "very peculiar" fooling around the inside of the legs of his pants, which caused him to jump as though he had sat on the wrong end of a tack. He immediately marked the article "dead." The compositor never found out why he "killed" his best production.

QUERIES AND REPLIES.

QUERY.—*Straight Combs—Unhatched Brood—Time for Section Boxes—Artificial Swarms, &c.*—I wish to ask you, or some of your subscribers, a few questions:—1st. What is the best means of making the prepared combs straight—that is, having them straight in the bars when fastened in? 2nd. Is there any means of preventing the bees joining the frames together at the top? 3rd. Is it well to cut out all mouldy comb? 4th. I notice a few bees, say about half a dozen, in some combs which have not come to maturity—some of them have a very disagreeable smell,—when opened is it better to leave them in, or to pick them out? 5th. Is there any trouble to get bees to work in section boxes? I failed last season, but probably put top boxes on too late. 6th. When is the proper time to put top boxes on? 7th. What is the best plan to catch a queen you wish to take out of a full colony? 8th. What is the proper time to make artificial swarms? 9th. Is it advisable to have an extra mat or extra covering on top inside hive for wintering bees? 10th. Are Italian bees much quieter than black bees in handling?

J. BARKLEY.

Westport, August 4th.

REPLY.—1st. If the sheets of foundation have been lying perfectly flat previous to making use of them, and are put into the frames with the aid of a proper board, as described in the *Manual* and price lists, we know no reason why they should not hang straight when fastened in the frames. To ensure the combs being built *within* the frames the hive should be set perfectly level from side to side, in order that the frames may hang plumb. If the hive is a little out, the sheet of foundation will hang plumb, but the frame will not, consequently the lower half of the sheet will project beyond it. We very rarely indeed find any of our combs but what are worked out as flat as a board. We always use a spirit-level when placing the bottom boards in position. 2nd. We presume you mean "bridging" from top bar of one frame to top bar of next. We do not know of any means to prevent it, but as it does not materially interfere with the working of the hive we think it is of little consequence. The bees only do this when making preparations for winter, and a thin knife run through at any time will separate them. 3rd. If not very mouldy take it out of the hive and dry it, and place it in the centre of a strong colony as soon as the bees are gathering honey, and they will clean it very quickly. 4th. To be on the safe side uncap the cells containing dead larvæ, and spread a little solution of salicylic acid and borax over the combs, spraying it well into the cells. 5th. As a rule, no. 6th. As soon as the lower hive is getting pretty full of bees and brood, taking care not to delay putting them on till the bees have begun to prepare for swarming. With a first swarm in a good locality, the top box is usually required in four or five days after hiving it. 7th. We do not know of any particular plan except to look for her until you find her. When we wish to catch the queen, after removing an outside frame to make room, we lift one of the centre frames; if not on this we hang it in the comb-holder, or an empty hive, and examine another, and so on till we find her. If there are many empty cells in the central combs she is pretty certain to be on one of them; but if they are pretty full of brood she is likely to be on

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one of the outside combs. 8th. Just at the commencement of the main honey harvest. Here at Matamata, where white clover is our main harvest, it would be about the end of the third week in October in an ordinary season. Of course the colonies should be in condition for it at this time. 9th. Yes; more especially in the early months of spring. 10th. Yes; we find them so.

QUERY.—*Drone Comb.*—In the artificial comb foundation I saw at a neighbour's house the cells appeared to be all one size, viz., for workers. Will the bees enlarge some of these cells for the drones, or must I have a special hive for drones? If so, is suitable comb made, or must I get old comb from somewhere?

BUMBLE BEE, .
Churchill.

REPLY.—We will give the same reply to the above that was sent to us by a leading apiarist in America in answer to the same question, when we were sending for our first foundation machine: "Don't bother about the drones, the bees will arrange that matter; the only thing you will have to do is to see that you don't get too many." This I have found to be very good advice. If an extra amount of drone comb is required put strips of worker comb instead of full sheets in one or two frames and the bees will finish with drone comb.

NOTICE TO CORRESPONDENTS.

WE have been asked why we advertise in our price list nine frames in a colony of Ligurians, instead of ten. Answer.—Because our method of packing the interior of the hive will not allow of more than nine frames.

WE do not expect to have queens, &c., ready to send out before November. Should they be ready before that time they will be sent out immediately; we shall only be too happy to let our customers have them as early as we can.

NOTICE TO NEW SUBSCRIBERS.

WE are having sufficient extra copies of each issue printed to allow all new subscribers during the first year of the JOURNAL to obtain back numbers from the commencement, and unless notified to the contrary we shall send them.

HONEY PLANT SEEDS.

We have a little Spider Plant seeds to spare, which we will send post free at 1s. per packet.

SPECIAL NOTICES.

QUERY AND REPLY DEPARTMENT.—Correspondence for this department should reach the editor not later than the 15th of each month, when replies are required in the next issue.

ADVERTISING DEPARTMENT.—Advertisements for the next issue should reach the publisher by the 24th of each month.

Correspondence for publication may be sent at book post rates *i.e.*, one penny for every two ounces, providing the book post regulations are complied with, and the words "Press Manuscript" are written on outside of cover.

Our Correspondents will oblige by writing articles for publication on one side of the sheet only.

P.O. Orders for Subscriptions, Advertisements, &c., to be made payable to J. C. Firth, Chief P.O., Auckland, and sent under cover to H. H. Hayr, High-street, Auckland, or P.O. Box 186.

HONEY MARKETS.

AUCKLAND, October 1st, 1883.

The demand for extracted honey is very good. Prices at present are—for 1lb. tins, wholesale, 8s to 8s 3d per doz.; retail, 10d to 1s per lb.

AUCKLAND AGRICULTURAL AND MERCANTILE CO., Limited.

ENGLAND.

AUGUST 1st, 1883.

There are no quotations in the *British Bee Journal* for August 1st, but an advertisement appears offering 1s. per pound for five tons. There is also an advertisement from the same firm in the *American Bee Journal*, offering to purchase large lots of comb-honey, delivered in London, at an advance of 5 cents per pound on New York prices; this would be at the rate of 1s. per pound.

AMERICA.

NEW YORK, August 15, 1883.

HONEY.—We take pleasure in quoting the following prices on honey obtainable in our market:—

	c.	c.
Fancy white clover, 1lb sections (no glass)...	20	@ 21
Fancy white clover, 2lb sections (glassed) ...	18	@ 20
Fair white clover, 1 & 2lb sections „ ...	16	@ 17
Fancy buckwheat, 1lb sections (no glass) ...		15
Fancy buckwheat, 2lb sections (glassed) ...	13	@ 14
Ordinary buckwheat, 1 & 2lb sections „ ...	11	@ 13
Extracted clover honey, in kegs or bbls. ...	9	@ 10
„ buckwheat, „ „ ...	7½	@ 8
BEESWAX.—Prime Yellow	31	@ 33

H. K. & F. B. THURBER & CO.

—*American Bee Journal.*

SAN FRANCISCO.

HONEY.—Gloomy accounts continue to be received from the southern coast counties regarding the honey crop. In the region of Tulare there is a good yield. Some Tulare comb, crossed and mixed, was placed at 13½c., and extracted of the crop of 1881 sold at 7½c.

	c.	c.
White to extra white comb	16	@ 20
Dark to good	10	@ 13½
Extracted, choice to extra white	7	@ 9
Dark and candied		6½
BEESWAX—Inactive and easy at	27	@ 28

STEARNS & SMITH, 423, Front-street.

—*American Bee Journal.*

OUR HONEY IMPORTS.

The value of honey imported into the United Kingdom during the months of May and June, 1883, amounted in all to £8,315.

DEMAND FOR HONEY.

The following advertisement appears in the *British Bee Journal* for July 15th, 1883:—

"FIVE TONS WANTED FOR CASH.—Honey in the Comb.—Wanted, for Cash.—We will pay 1s. per lb net. for bright-coloured honey in straight combs, no matter whether stored in straw, supers, frames, or sections. Honey to be sound and unbroken, and delivered to us at some railway station in London.—W. M. HOGE & Co., honey dealers, Leconfield Road, Stoke Newington Green, London, N."

SCALE OF CHARGES FOR ADVERTISEMENTS.

Single Column.	£	s	d	Double Column.	£	s	d
Three lines	0	1	6	Page	2	10	0
Per line afterwards ...	0	0	6	Half page... ...	1	7	6
Inch of space	0	3	6	Third of page ...	1	0	0
Quarter column... ...	0	8	0	Quarter column ...	0	17	6
Half column	0	15	0				
Whole column	1	5	0				

DISCOUNT FOR SERIES.

3 insertions ...	5 per cent.	12 insertions...	20 per cent.
6 „ ...	10 „	24 „	30 „

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THE NEW ZEALAND AND AUSTRALIAN

BEE JOURNAL

Devoted exclusively to Advanced Bee Culture.

VOL. I. No. 5. | AUCKLAND, N.Z., NOVEMBER, 1883. | Published Monthly, Price Sixpence.

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I. HOPKINS.....Editor.
H. H. HAYR.....Business Manager and Publisher.

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Half-yearly „ ... ... 3s.

Post free on day of publication.

On account of the Postmaster-General declining to register this Journal other than as a Magazine, book rates of postage are charged to places beyond New Zealand; consequently, we shall be obliged to charge 7s. per annum to foreign subscribers.

All correspondence intended for publication to be addressed to the Editor, Matamata, Auckland, New Zealand, and business communications to the Publisher, P.O. Box 186, Auckland, New Zealand.

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CALENDAR—NOVEMBER.

THE weather during the greater part of the last month was of unusual severity; in fact, such as we do not remember ever having experienced so late in the spring before; it was nothing but a succession of bleak wind, hail, and rain storms; reminding one of the depth of winter, rather than of the second month in spring. We gather from various reports that the late stormy weather has been general throughout New Zealand and a part of Australia. The honey season in consequence has been retarded to a considerable extent; we believe it will be fully a month late. During the month of October an extra quantity of food is consumed in each hive in the rearing of brood, and in an ordinary season bees are able to gather sufficient to supply their wants and start them comb building early in the month; but up to the time of writing ours have been using their old stores, and comb building has scarcely commenced yet; luckily they had a good supply of food from last season. Feeding should be attended to where stocks are short of stores; for under no circumstances must bee-keepers lose sight of the golden rule of bee-keeping—"Keep your stocks strong," and this cannot be done unless they are well supplied with food. Those who keep their bees well up to the mark will be amply repaid as soon as the season sets in, for we have found that the yield of honey in late seasons is, as a rule, very heavy when the harvest commences.

Owing to the late severe weather our queen rearing, swarming, and other operations are rather backward; we had our first batch of queen-cells—a splendid lot—ready for transferring to nuclei on the 9th of last month, but for over a week we could not open a hive, and the consequence was they were all destroyed, so that we had our trouble for nothing. We have only just been able to start another lot, and we hope those of our customers who have ordered queens and nucleus hives will be pleased to exercise a little patience until we can send them, being assured that we will forward them as soon as possible.

Some of the directions given in last month's calendar will apply to this month. Where natural swarming is

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allowed after-swarming should be prevented by cutting out all queen-cells but one, and giving more room by putting on a top box. The spare queen-cells may be made use of to form nucleus colonies, and thus keep a supply of queens on hand.

Surplus Boxes.—In our October calendar we gave directions as to the time for putting on top boxes; we will now give a few hints with regard to the same. Of course we can only give in each monthly calendar a general idea of the time for performing the various operations; a great deal must, of necessity, be left to the judgment of each individual bee-keeper. There are many things that will tend to vary the time, such as the weather, difference of locality, strength of colonies, etc., so that he or she is likely to be most successful who works according to circumstances; for, as has been often remarked, "there can be no hard-and-fast rule laid down in bee-keeping." To return to our subject. As before stated, top boxes should be put on when the lower hives are getting pretty full of bees and brood, and honey is being gathered in fair quantities. Previously, however, to putting them on, the lower hives should be examined and if the combs therein contain much honey it should be extracted to give the queen plenty of room to deposit eggs in the brood nest proper. Care should be taken when extracting honey from combs containing brood not to turn the extractor too fast, as this would throw out or injure the brood. The above with regard to extracting from lower box will apply in either case whether running for comb or extracted honey.

Extracted Honey.—When working for this the top box should be a full storey with the ordinary brood frames filled either with comb or comb-foundation. When about to put it on, one or both of the outside combs of the lower hive, if containing honey only, may be put into the top box, supplying their place with empty combs or frames of comb-foundation which may be put near the centre of the brood nest. The combs and adhering bees being taken from the lower and placed toward the centre of the upper box induces the bees to take to it more readily. If the weather is cool the mat should be covered down snug, the cover put on, the date noted, and the hive left undisturbed for a few days. If honey is coming in pretty rapidly the top box will soon be taken possession of, and as the combs are filled the extractor may be brought into use. With regard to ripening the honey, most bee-keepers are of opinion that it can be ripened outside as well as inside the hive; after experimenting in this direction we are amongst those who think so. But there are some experienced apiarists who do not believe the honey is so good as when allowed to remain in the hive until it is capped over. Where it is required to remain on the hive until it is capped or sealed, a second top storey may be needed if there is a good flow of honey, as the combs would probably be nearly all filled before any was completely capped. In this case the bees would be getting short of room, and would make preparations to swarm, thus curtailing their season's yield. To guard against this, as soon as the top box is about three-parts full it should be lifted up and the second box placed underneath. This arrangement not only places the partly finished combs where they can be easily taken away when capped, but assists to keep the brood nest cool by giving the extra room immediately above it. As soon as there is a force of bees to spare from the upper top box they will commence to work in the lower one. The combs when capped may be extracted, and the box will then be ready to take its former place if necessary. When honey is coming in slowly go slow with the extractor so as to make sure of leaving the bees plenty of food, in case the flow stops suddenly.

Ripening Honey.—If it is intended to ripen the honey after extracting, the combs may be emptied at any time; in this case one top box would be sufficient. For ripening honey, the most simple way is to let it stand in wide mouth tins, waxed barrels, or any other suitable receptacle in a very warm room. The vessels should be covered closely with some open material like cheese-cloth to keep out the dust and allow of the evaporation of any watery particles the honey may contain. In the space of a short time—depending, of course, on the state of the honey when extracted, and the weather,—the honey will become quite thick and ripe, when it may be marketed. Every care must be taken to see that it is perfectly ripe before tinning, or it will ferment.

Comb Honey.—We have found in raising comb honey that two half-storeys are preferable to a full one as a top box. When a full storey is used the lower tier of sections are usually filled first. This, owing to the force of bees working immediately above the brood nest tends to make it extra warm, and unless the partly filled sections are exchanged with those in the upper tier swarming is likely to result. Our method in working the two half-storeys is to put on one half-story first, after seeing that there is plenty of vacant cells for use of the queen below. If we have any partly worked sections on hand we put them in one or two of the central frames of the half-storey to entice the bees to take possession. We occasionally leave out one frame and spread the others out a little until the bees have started to work in the sections, when we close them together and put in the frame. When work has got fairly started in the first half storey we lift it up and put on the second *underneath*. If honey is coming in very rapidly a third half storey may be required before the upper one is ready to remove, as every cell will require to be sealed before the sections are ready for market. Each section, as it is finished, should be removed from the hive, cleaned from propolis, and stowed away in a crate ready for market.

Ventilation.—Considered in connection with swarming, ventilation is a very important matter. When surplus boxes are on swarming *must* be kept down by all possible means if we desire to get the best results in honey from the bees. By never allowing the bees to get over-crowded for want of room, nor the interior of the hive too hot, we have generally been able to keep the swarming fever down within reasonable limits. We have already stated how to guard against the former, and will now point out how we accomplish the latter. As the warm weather sets in and bees commence fanning at the entrances we push the hives forward on the bottom boards a little occasionally, until we have the entrances enlarged to their full extent. Then in the very hottest weather we raise the hives off the bottom boards a quarter of an inch or so all round with wedges, and, if necessary, raise the cover a little, but still keeping the mat on the frames. Raising the hives not only allows of more ventilation, but gives better facilities for the bees to get in and out of them at their busiest

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time. Of course, as soon as honey is getting scarce we lower the hives and gradually contract the entrances so as to keep out robbers. There need be no fear of robbing while there is plenty of honey to be gathered in a legitimate manner.

LEANDRI'S SOLAR WAX EXTRACTOR.

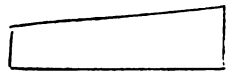
We notice in the June number of the *British Bee Journal* for this year the description of a very ingenious, simple, and economical wax extractor; the invention of an Italian, Mr Giuseppe Leandri. This will prove a great boon to bee-keepers should it come into general use, which, no doubt, it will.

It is generally admitted that a very large quantity of wax is wasted annually amongst bee-keepers, especially amongst those who keep but a few hives. This is due in a great measure to the want of a ready means of melting old combs and pieces of wax that accumulate about the apiary. For there is no question that with the ordinary means at the command of small apiarists, the melting and cleaning of wax is one of the most untidy and unpleasant operations connected with bee keeping. Although the Gerster wax extractor answers the purpose very well, it is best adapted for melting large quantities of comb. Besides, it would scarcely pay the small bee-keeper, who has only a pound or two of comb occasionally to melt, to get one of these. And this is where the chief waste has been; for rather than clean small quantities in the usual manner they have thrown it away as not worth bothering with. Yet if all the pieces of old comb were saved and melted into wax bee-keepers would find that in time a considerable addition to the income from the apiary would be obtained from this source. Consequently every apiarist will hail with satisfaction the introduction of a simple and inexpensive machine that will answer the purposes of all, and do its work effectually and economically. The solar wax extractor is so simple in construction that any bee-keeper will be able to make one for his own use; and it may be set to work in less than a minute by merely placing it in a sheltered position where the rays of the sun will fall directly upon it. The following is Mr John Iamaschella's—an apiarist of note—description of Mr Leandri's invention:—

"The basis from which the power for melting wax in these machines is derived are the rays of the sun descending upon a pane of glass placed at a certain distance from a metallic sheet, between which the finely-broken up combs intended to be operated upon by exposing the extractor in a direct line with the sun are placed.

"In the case of one seen at Palermo by Professor Puglia, instead of being furnished with only one pane of glass as in Leandri's, it was constructed with two, slightly convex, thus forming, it is believed, a more powerful lens. The comparative advantage or disadvantage of this arrangement is one which our scientific friends will undoubtedly hasten to settle satisfactorily. In the meantime, suffice it to record that the main basis of a new and sound principal for extracting wax by means of the sun has been, thanks to the above-named inventor, added to our scientific knowledge. Time and experience will soon determine what the most convenient shape of the new apparatus is to be. At present, however, the one adopted forcibly reminds me of a small garden frame with glass on."

Our own idea for making a cheap one is to take a small box, such as a gin case, and take out one side, cut the ends diagonally from upper part of back to say 4in from bottom of front, thus—



End of box.

Nail a thin 2in batten across the upper part of front to strengthen it, and two 1in battens on the bottom of the box to raise it off the ground. Line the ends and sides of the box with tin, perforating the strip for the front with small holes to allow the molten wax to run through, and place a stout sheet of zinc or galvanized iron on the bottom. A clean kerosene tin cut to fit would do for lining the box. Now get a sheet of stout glass and make a small frame to put it in the size of the sloping top of the box; hinge the frame to the back and the solar wax extractor is made. When in operation the machine might be given a slight incline to the front to facilitate the melted wax running through the perforations. The invention of the solar wax extractor marks another step in advance in apiculture.

OUR REVERSIBLE BASKET SIX-COMB HONEY EXTRACTOR.

We have now received our new extractor and according to promise give our readers a description of it.

The case or cylinder inside of which the framework supporting the comb baskets revolves, is made of 1½in. timber, lined with stout tin. It is hexagonal in shape, 44in. in diameter at its widest parts; each of its six sides measuring 22in., making its circumference 132in.; height, 33in.; the above are outside measurements. Wood is the most suitable material for the case, as it keeps the machine firm while at work.

The outer part of the framework upon which the baskets hang is cast metal; cast in pieces to form each of the six sides. These pieces are shaped thus II, the top and bottom bars being 16½in. long, and the depth of the frame 19½in. The bars are 1in. in width, by 3-16in. thick. At the corners where the sides join each other, socket-pieces are riveted in the angles at top and bottom. These pieces, as well as securing all the sides together, answer as parts of the hinges for the comb baskets.

The comb baskets are made of tinned wire cloth 2in. wide by 19in. deep, secured at top and bottom by two bands of metal like the bars of the framework. At one end of each of the bands arms project 2in.; each being furnished with a pintle which is made to fit in the socket-pieces and so form hinges like those of a field gate. These hinges allow of the baskets being turned so as to take each other's place, and thus bring the opposite side of the comb to the front, after one side has been extracted; the baskets turn towards the centre.

The spindle, or journal, is a ¾in. round iron bar 37in. long. A short distance from the top and bottom ends are two six-sided nuts. From each of the six sides of each nut the supporting arms of the framework project;

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these are made of ⅜in. round iron, their ends being screwed on to the framework. The lower part of the spindle works in a socket fastened on to the bottom of the case while the top passes through a curved bar of iron which is screwed on to opposite sides of the case. A handle 10in. long fits on to the spindle above the bar of iron and is made secure by a screw-nut. At one side of the bottom a honey-tap is fastened in, and the extractor is complete.

Our extractor has been made much heavier than was necessary, and than we would have had it, had we been able to have superintended the making of it. We consider that a six-comb extractor like the above made of less costly material should be made for about £10.

The advantage of having such an extractor in a large apiary must be at once apparent, as six combs can be extracted at one time without the necessity of lifting them out until all the honey has been extracted from both sides.

BEE GLOVES.

In answer to several enquiries respecting India-rubber bee-gloves, we may state that we do not think they are at present obtainable in these colonies. Messrs. Bagnall Bros. having had their attention called to this matter, will, no doubt, include bee-gloves among their apiarian appliances in future.

In September, 1881, Mr Abbott, the then proprietor of the *British Bee Journal*, introduced a very useful bee-glove that was said to completely protect the wearer from stings when manipulating the bees. The following is the paragraph introducing the gloves, which also explains how they are made:—

"The discussion on the relative merits of India-rubber, as compared with other gloves, induced us to recommend that knitted cotton or worsted gloves, covered with gauntleted 'Berlins,' be used, and having been tried and approved, we have had a quantity of the latter made of extra length, to come about half way up the arm, and effectually prevent bees getting 'up the sleeve.' In dealing with our Syrians the other day we found them specially useful; the bees had punished one of our juniors considerably, and driven him away to pick out the stings about his wrists, but covered with gloves, which we had dipped in water when on, not a bee touched them except in two instances—to suck up the moisture. The gloves are little more than half the price (per double pair) of the India-rubbers, and there is the advantage that any needle-woman can repair them. In warm weather, when wetted with water, they are a real luxury as compared with those in which the hands are bathed in their own perspiration. They are the best protection we know of, the bees do not try to sting them. If they did they could scarcely sting through them, and supposing that to have happened, the poison would be diluted considerably by the water in the gloves. If they were wetted with an alkaline solution, there would be perfect immunity, for the attempt to sting would bring acid and alkali in contact, and the bee would get a serious 'blowing up' from the explosion of the generated gas. What fun it would be if the attempt to sting should thus recoil on the stinging end of the bee."

The above kind of gloves should be easily procurable. We would suggest that an ordinary pair of cotton gloves be covered with a thin pair of woollen ones, having a pair of stocking legs sewn on to them for gauntlets. We should, however, have thought that the cotton pair would have been better outside, knowing the antipathy the bee has to any woollen or hairy material. Evidently the above gloves answer very well, for a correspondent, after a trial of them, writes as follows:—

"I write in the first flush of a brilliant success with your new gloves received by post this morning. I tried them in examining three hives during a half hour of sunshine. Some bees were very irritable. I just soaked the outer pair in a solution of washing soda. The success was brilliant.—John Martin, Ensinge, Sept. 3rd, 1881. P.S.—You can use this as you like. To show there is facility of manipulation with the gloves, I afterwards caught a queen by her wings and caged her.—J. M."

TO AUSTRALIAN BEE KEEPERS.

Artificial comb-foundation of our make in three, five, and ten lbs. boxes, can now be obtained from the New Zealand Loan and Mercantile Agency Company, Sydney, New South Wales, and Melbourne, Victoria, at 3s. 6d. per lb.

The above comb is in sheets cut to fit the Langstroth frame 16¼ inches by 8¼ inches, and suitable for brood and extracting frames.

We publish in this issue the first part of a very interesting paper from our correspondent "T.J.M.," entituled "Climate and Bee Culture."

The subject to which "T.J.M." has called attention is of great importance to bee-keepers in all parts of the world. Hitherto, little attention appears to have been paid to the influence of climate on bees and bee-culture; but this is not strange when we take into consideration that until quite recently bee-culture as an occupation was looked upon as of very little importance, but now that it is becoming an extensive and widespread industry, no doubt this, and every other matter in connection with it, will be carefully studied. Our correspondent has evidently given the subject of his paper considerable thought, and drawn attention to some very interesting facts; we, therefore, commend it to the notice of our readers.

NOTICES TO CORRESPONDENTS.

H. Naveau, Hamilton, Victoria.—The subject of your paper being entirely upon the management of box-hives, and as we are striving to get every bee-keeper in the Australasian colonies to discard them and adopt something better, we cannot publish it. Did we do so, instead of following out our motto, "Forward," we should be retrograding. Anything that will tend to *advance* the knowledge of bee-culture we shall be glad to publish.

There are bee-keepers in Egypt who make it a practice of putting their hives on boats at the commencement of each season, and floating them down the Nile. These boats are occasionally brought to an anchor in districts where bee pasturage is abundant. When honey is getting scarce the boats are shifted to a new locality where the season is just commencing, thus prolonging the honey season to a considerable extent. Sometimes they are absent for three months or more, and return with the hives heavily laden with honey.

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CLIMATE AND BEE CULTURE.

BY T.J.M.

No one can doubt that difference of climate must exert an influence upon the health, habits and working powers of the honey bee, as well as upon the vegetation which furnishes the raw material for the industry of the insect, but I am not aware that it has as yet been made a matter of strict enquiry what the amount and practical value of that influence may be; what the limits of tropical heat on one side and of polar cold on the other, within which bee-keeping may be successfully followed; and what the conditions of climate under which the greatest effect may be obtained in the way of honey produce, by any given mode of treatment, and with any special race of bees. And yet it appears very desirable that we should have clear views on these matters so that those who live under skies the most favourable for this branch of industry may be fully aware of the advantages which they possess, and be led to take the proper measures for turning them to the best account; while those who are less favourably situated may know exactly what difficulties they have to encounter, and see their way to adopt the most effective means towards neutralising or overcoming them. As the NEW ZEALAND AND AUSTRALIAN BEE JOURNAL is intended to represent a section of the globe which includes so great a variety of climate—from that of tropical heat to one such as prevails in the most northern countries of Europe—it would seem to be particularly expedient to invite the attention of its readers to the consideration and discussion of this subject, with a view to eliciting information from those who may already have any particular experience bearing upon it, and in the hope of inducing others who are engaged in the introduction of the modern system of bee-keeping into new districts, to observe carefully the effects of climate upon their operations and to communicate the results of their experience from time to time.

There are some general points of view in which it may be well to consider the subject in the first instance, and which may help to indicate those details which it is practically desirable to subject to a more minute examination.

The influence of climate upon the operations of the bee-keeper may be considered to be of a two-fold nature—first, as it affects the bee itself, especially the condition of the insect during the winter season; and, secondly, as it is favorable or otherwise to that class of vegetation which furnishes fodder for the bee and a rich and choice harvest during the honey season. In the first case it may be supposed to operate chiefly by its temperature, especially the average temperature of the winter months; in the second instance there are other factors to be taken into account besides mere heat, such as rainfall, prevalent winds, and relative position of land and sea, all affecting the question of moisture and drought, and probably in both cases, the position as to latitude, in so far as that affects the length of the day and duration of sunshine in the summer time.

If we seek for the original habitat of the bee in order to see what degree of winter temperature is most natural to the insect, we must look to Assyria, Egypt, Palestine, and Asia Minor, as all the early records of the human race, including the oldest and most venerable of all, prove that the bee was at home in these countries from time immemorial. We may naturally suppose that bee-culture was introduced into Greece and the islands and shores of the Mediterranean generally by the early Greek colonies which had sprung up along the coasts of Asia Minor and Phœnicia, and afterwards carried by the Romans into all their northern conquests as far as Britian. Whether the present Italian or Ligurian bee is the descendant of the original Asiatic bee, and the Northern German or black bee the descendant of the Ligurian—the differences at present existing having been caused by acclimatisation only—or whether they are separate species indigenous to the countries where they are now found, is a question I am not prepared to discuss; but we have sufficient experience to show that bees of whatever class have a great facility for accommodating themselves to very considerable differences of climate. What we have now to consider is, in how far, when once acclimatised, their working powers may be affected by such difference of circumstances.

Upon consulting a good modern Physical Atlas, where the charts relating to "temperature" are divided into sets showing the isothermal lines of mean temperature for the different seasons of the year, we shall find that all those countries above referred to as the original home of the bee, as well as all those at present most noted for the production of honey, lie between the lines of 41deg. and 59deg. *mean winter temperature*, the medium line of 50deg. passing through Bagdad (ancient Nineveh) North of Palestine and Cyprus, South of Asia Minor, Greece and Italy, through the islands of Sicily, Sardinia and Minorca to the boundary between Spain and France—thus passing through or close to all the localities most celebrated both in ancient and modern times for the quality of their honey. We may, therefore, not unreasonably assume an average winter temperature of 50deg. to be about the normal one for bee-culture. Passing over to North America we shall find the same isothermal line traversing the Southern States in rather a low latitude, and the Western States in a much higher one, passing through California just north of San Francisco. Here we find additional reason to assume the suitability of this winter temperature, California being, as far as I am aware, the most important of the honey-producing States of the Union. Leaving the Northern Hemisphere, and looking to South America, we find the 50deg. winter isothermal passing through the La Plata territory and through the centre of Chili at its capital, Valparaiso. And here again it will be found that the introduction of bee-culture in the neighbourhood of Buenos Ayres, which took place about twenty-five years ago, has been attended with unusual success; and, also, that Chili exports at present large quantities of honey to England. It is true that the quality does not rank high in the London market where this honey is only bought for manufacturing purposes, and priced very much lower than the Californian honey; but that is no doubt merely owing to the fact that the improved system of bee keeping is not followed in Chili, the honey being all pressed out of the combs instead of being extracted, and being probably for the most part wild or bush honey. The 50deg. winter isothermal followed Eastward leaves the Cape of Good Hope altogether to the North, but passes through the Southern part of Australia, about midway between Adelaide and Sydney on the North and Melbourne on the South, and then through the centre of the Province of Auckland, about the latitude of the East Cape. The *whole* of the New Zealand Islands, and all the Australian Colonies South of Queensland lie between the lines of 41deg. and 59deg. mean winter temperature, exactly as in the case of the most favoured

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honey countries in the Northern Hemisphere. As regards that point, therefore, and as far as we can judge from analogy, we have every reason to conclude that these colonies are all favourably, and the districts of Victoria in Australia, and of Auckland Province in New Zealand, especially well situated with respect to winter temperature. This conclusion, however satisfactory in itself, does not, however, by any means exhaust the subject, as we have still to see what is our condition relatively to other countries in other respects, particularly as regards the summer temperature of our climate.

(*To be continued.*)

THE STANDARD FRAME FOR AUSTRALASIA.

BY L. J. BAGNALL.

This subject is attracting attention amongst bee-keepers in this country, and it is advisable that it should be considered well before much capital has been expended in purchasing hives suitable for a particular frame, which might afterwards have to be discarded, causing heavy loss to the owners. Much has been said and written both in England and America on this subject, and I have thought while reading the opinions of different writers that much of their arguments arose from the fact that the frame they were advocating was the one they used, and therefore better than the frame anyone else used. I confess that, so far as the size of the hive or frame is concerned, I think the bees care little whether it be an inch shorter or an inch deeper than my own or my neighbours; but I do think it is very important that bee-keepers in any country, and, if possible, in every country, should have and keep to a "standard" frame. I will instance one circumstance alone which will serve to demonstrate this. Supposing my neighbour has a number of hives and bees for sale and that I want to buy them. I use the Langstroth hive and frame. He uses some other—the Abbott, say. They would not be worth nearly so much to me as if they were in hives and frames which I could use interchangeably with mine. So that while I believe that my neighbours bees will do as well on an Abbot frame as mine in a Langstroth, yet there can be little doubt but that it would be much better for both of us if we both had the same sized frame and hive. The advantages accruing from having all the hives and frames in an apiary interchangeable are so manifest that there is no bee-keeper of any experience but must be aware of it. It is equally important that the frames and hives of every apiary in the country should also be interchangeable. The length of time which the Langstroth frame has been in use, and the fact that in America there are more used now than there are of all the other sizes put together, proves that it is as good at least as any other, while there are many circumstances which make its adoption in these colonies both convenient and expedient. It is a very convenient length and depth for handling, and also for the extractor; it just takes in eight 1lb. section boxes; it can be used for side storing or for top storing, and it is now more extensively used in Australia and New Zealand than any other. These seem to me to be more than sufficient reasons for adopting it as the "Standard for Australasia." I do not think it will be necessary to pass an Act of Parliament to compel its adoption under pain of imprisonment or fine; the utility and convenience of it will certainly secure its voluntary use by every progressive bee-keeper, especially as the importance of it has been so early brought under the notice of the public.

I know there are some in this country who think the Langstroth too long, and a hive which takes 10 frames too wide for wintering in, unless the colonies are very strong. I have wintered both strong and weak colonies in them, and feel sure that there is no room for objection on these grounds. The use of division boards, and warm covers, will insure the safe wintering of any moderate-sized colony in any part of Australasia, while strong ones only require to be kept dry, and given plenty of food.

I have already persuaded several bee-keepers to give up the irregular-sized hives and frames, and take to the Langstroth. In my own apiary the first hives I made were not the right size. They gave me a lot of trouble until I finally superseded the whole of them.

Hape Apiary, Thames, Sept., 1883.

[We cannot altogether agree with that part of our correspondent's paper wherein he intimates that "bees will do as well,"—*i.e.*, be as profitable to the owner on one sized frame as another. We do not mean to say that any particular sized frame will put more honey in the flowers for the bees to collect; nor that it will enable each individual bee to carry a heavier load; but we do believe that there are frames and hives the size and form of which will give better facilities for manipulation, storing of honey, &c., and raising brood than others, which would make them more profitable, just as there are some dwellings more convenient to the inmates than others. It was by carefully studying these points—and not by any haphazard process—that made us adopt the Langstroth frame in preference to any other.—Ed.]

APICULTURE IN QUEENSLAND.

BY C. FULLWOOD.

Sir,—I just want to let you know of the successful importation of another parcel of queens from Italy *direct*.

Twelve queens were despatched from Bologna about 21st June, Naples 23rd (by the Orient liner 'Iberia'), arriving at Sydney 2nd August, Brisbane 9th August. I obtained them on the 10th.

Of course I was anxious to ascertain how they did, so that as soon as possible I separated the wee boxes, and found life in ten of them. I at once estimated I had ten queens, for as a rule queens survive when workers all succumb. I at once prepared nine nuclei, and made one weak stock queenless; then, with cages made of wire cloth bent up at all sides and partly unravelled so as to press into the comb, I proceeded to open and examine the boxes containing the little travellers. Some of them contained quite a number of lively bees; some had diminished considerably, but few being left. One had just two live workers, and the queen she appeared lively.

As I opened them I secured the queen, clipped a wing, and caged her alone on a comb of unsealed honey—inserting the comb in the nuclei—prepared by dividing strong stocks having plenty of young bees, taking care not to have the queen with them, and placing them so that most of the old bees would get back to the old

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stock. Thus I dealt with nine queens. One I introduced to a weak stock without dividing. The second day after introduction I released the queens. In one case only the bees had worked through the comb into the cage. Quite a number were thus inside, and fraternising with their new queen. *All the ten queens* were received, and in a few days were all depositing eggs in vacant cells.

I think I have now quite sufficiently demonstrated the practicability of obtaining with very little risk queens direct from Italy, and that the passage of the Red Sea and tropics can be made quite successfully; and as to the matter of introducing queens on arrival by adopting a method such as stated, where *young bees* are used, the losses need be very few.

Brisbane, August 27th, 1883.

(*For the N. Z. and A. Bee Journal.*)

All correspondence must bear the name and address of the writer, not necessarily for publication, but as a guarantee of good faith.

HIVING TRAY.—A CORRECTION.

Sir,—In the description of my hiving tray in the August number of the Bee Journal, an error has crept in which, in my opinion, will make the tray less useful than if it is made as I use it. The error occurs in the central paragraph, it reads thus: "Four fillets 1½in square by 3in." It ought to have been four fillets 1½in square by ¾in thick. The latter height places the lower bars of the frames 1½in above the floor of the tray, not pressing injuriously on the bees that have been shaken into it, enabling them to rise quickly and easily up amongst the frames into their new home, a matter of some importance, especially when the bees of an apiary are in a swarming mood. I have no doubt if the tray were used in some of the extensive apiaries in New Zealand it would be found useful, for the process of hiving a swarm with the tray is a short one. When the swarm has settled on a bush or other object a foot or more above the ground, place the tray above it, or where it can be done, hold it up with the left hand by the strap on the back of the tray below the swarm, and with the right one shake or brush the bees into it. Set it immediately on the ground, and place the framed hive into the tray over the bees resting on the fillets at the corners; cover with a cloth, except in front. Generally, in a short time, all the bees will be up and settled amongst the frames of the hive. The tray and hive can then be carried to the permanent stand. If there are still a few bees on the tray the hive can be lifted on the permanent board. If the bees are not all up, or nearly so, let the hive and tray remain united until sun down, when they are easily adjusted. I have frequently had a new swarm in its hive, also the hive placed on its permanent board and stand, within half an hour of the time it left the parent hive.

In a note to my former article you say if I had followed the instructions in the *N.Z. Bee Manual* I would have found no difficulty in hiving swarms. With all due deference to your extensive practise as an apiarian, I reply that if you will give the tray system a trial you will have less trouble than by the method described in the *Manual*, and do it in less time. These intelligent insects do not waste time; neither must the bee-master do so, as their interests are his; they always repay prompt attention to their interests. By the tray system the bees, in swarming and hiving, receive only one shaking into the tray to get into the frame hive. By the *Manual* system they receive two shakings to get into a frame hive—first into a box, and some hours afterwards a second one from the box on to a cloth before they get into the hive. Last spring and summer I hived some seventy swarms with my two trays, putting some into frame hives and others temporarily into boxes. Those in the latter were added to weak hives to strengthen them.

My practise before I hit on the tray system was very much like that described in the *Bee Manual*. After some eight years experience with the trays I have no desire to return to my former practise. I do not say this with any intention of disparaging the *N.Z. Bee Manual*, for although I may differ from it in some of its methods of practise I consider it a cheap and valuable book of reference for these colonies—one that ought to be the hands of every man who keeps either five or fifty hives. Either of these will benefit by an attentive perusal of it.

C. H. J. Smith.

Kyneton, Victoria, September 1, 1883.

[We are obliged to our correspondent for the correction, but we certainly understood it to mean 3in. instead of ¾in.

With regard to the method of hiving swarms given in our *Manual*, it must be understood that we have written as well for the novice as those with some experience in bee matters; and as it is impossible—without making a work of this kind expensive—to give more than one method for each manipulation, we have chosen those best adapted to the beginner. We adopt almost the same method now to hive a swarm as that given in the *Manual;* the only difference is, instead of allowing the swarm to remain in the box near where it was taken till evening, we take it at once to the hive and knock it out on the cloth, &c.—Ed.]

THE FLIGHT OF BEES.

Sir,—How far do bees at times wander from their hives? About the year 1852 I read in the *Glasgow Herald* a paragraph respecting a bee which made me wonder. It was as near as I can remember as follows:—"Some ladies and gentlemen went to one top of Ben Lomond to stay there all night in the tents that they had erected for the purpose of seeing the sun rise next morning. The company went roaming about on the mountain searching for something to employ their attention. One of the party discovered a honey bee hovering round some wild thyme. In a few minutes the lone bee was surrounded and captured, everyone wondering where its home could be, as there were no houses or trees for many miles. At length a suggestion was made, and at once carried into practice. A tiny bit of silk thread was taken from a lady's dress, and

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certain little knots made on it so as to identify it if ever it appeared again. The silk was then fixed to the bee in such a manner as not to impede its flight; then set at liberty, it darted off in a straight line, humming as it went east-south-east, and was soon lost to sight. After the company got home to the city they remembered the bee, and were desirous to satisfy their curiosity. They advertised in several newspapers requesting bee-keepers to watch their bees working, and at the same time offering a liberal prize to any one finding the bit of silk and sending it to the address named. In a very short space of time the very identical thread of silk was received by the parties enclosed in a letter from a bee-keeper at St. Ninians, who got it on a bee's thigh working out-and-in at a hive in his apiary at St. Ninians." St. Ninians is about 3½ miles from Stirling, and from my measurement on the map of Scotland I find it to be eighteen miles from the top of Ben Lomond to St. Ninians, but I think from my knowledge of the place it must be at least twenty-five miles, the locality of which can be easily seen from the top of the mountain along the valley of the river Forth; no hills or any heights whatever intervening, so that the bee would have an easy descent all the way.—Yours, &c.,

JAMES M. CLARK..

Woodside, Pollock, 5th Sept., 1883.

[The distance a bee may travel in search of food depends, we believe, entirely upon circumstances. If a good bee pasturage surrounds the apiary, we think it would not go more than two miles at the outside; but if pasturage near at hand was scarce, we believe bees would travel several miles in search of food. The greatest distance that bees have travelled from their hives that has come under our own knowledge is four miles in a direct line. These bees were Italians, and only kept by one person in the neibourhood, so that there was not likely to be any mistake. If our memory serves us correctly, Mr D. A. Jones, when in Syria in search of bees, came across them flying at a distance of, he supposed, fifteen miles from the nearest hive, either wild or domestic.—ED.]

RECEIVING AND HIVING BOX.

SIR,—I am a subscriber to your *Bee Journal*, and have received the third copy. I am simply delighted with it. I may mention I am no novice in bee-keeping in the old style, but I now throw that overboard since I see the great advantages to be derived from the use of the Langstroth hive, &c. I have 16 strong colonies working vigorously and carrying large quantities of pollen. I am making 40 Langstroth hives to transfer them, and put their swarms into. I have been thinking much about the best method of introducing a natural swarm into a Langstroth hive filled with frames, as I think there is some want in this respect, and have contrived a receiving box which I will try to explain: Take a single Langstroth hive, make a groove along each side to meet shoulder where frames rest upon. Cut a slit in one end to admit a sliding roof, which will run in aforesaid grooves. Nail a long narrow brush permanently to the back of hive under slit with hairs long enough to cover the space. Have a low stand made suitable to place a Langstroth bottom board upon; place stand and board near where swarm is hanging. If hanging upon a small branch, by holding branch with left hand you can sever it with a pair of nippers (which appliance will cut without jarring) with right hand. Lay branch and bees gently on board, and place receiving box over them. They may be shaken in or driven in in many ways which will present themselves to the operator; but once in receiving box they are safe. Have your hive alongside with frames all adjusted. Simply stand it on top of receiving box, and draw out slide, when the brush will gently remove the queen and bees without hurting *one*. You will have them all safe inside. They will at once rise into your frame hive, and in about fifteen minutes you may take your receiving box away from under it. Run in your sliding roof, and it is ready for another swarm. Our honey pasture is natural mixed bush: unlimited quantity of Scotch thistle, titree, flax, whin, white and alsyke clover; also large orchard of peach, apple, &c.

W. T. BELOE.

Linwood Nursery,
Pukekohe, September, 1883.

[We are afraid our correspondent will find that he cannot remove the hiving box so quickly as he imagines. In fifteen minutes, instead of all the bees being up amongst the combs the greater part of them will be hanging to the bottoms of the frames, unless they are driven by rapping on the box, and this is not advisable with a new swarm. Some years ago we used a box the size of a hive, but not quite so deep, in which we took the swarm, carried it to the hive and turned the box bottom upwards, placing the hive on top; but we often found half the bees clustering on the bottoms of the frames the next morning after hiving them. If a reasonable time is allowed for the bees to cluster, and the hive is then gently lifted off the box and placed on its bottom board—taking care to prop it up a little to prevent crushing any bees,—they will soon ascend by being forced for want of room.—ED.]

BEE KEEPING IN THE GREY VALLEY. BEES ON SHARES.

SIR,—I commenced three years ago with one stock and have now 50; twenty in bar-framed hives, and the remainder in common boxes, as I had not sufficient time to make frame-hives for the whole of them.

There are a great many bees kept in the Grey Valley, but all under the old style. There is not one bee-keeper here with whom I can exchange an idea, my information on bees being wholly gathered from newspapers. I have no honey-slinger or other appliance for the proper manipulation of my bees. In taking honey I simply cut the comb from the frame and return the frame to the hive. I use a lower box and super. I find the bees do much better in frame-hives than in common boxes, and they are so much handier to work. You will perceive I am not very far advanced in bee-culture, never having had any previous experience and not having seen any person as yet who has worked hives on the modern principle.

Would you kindly tell me what is the price of honey wholesale for a quantity? I have sold mine in the comb at 1s per lb., but demand very limited. Would

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it pay me to get a man who thoroughly understands the business for the season? Are there stocks enough for anyone to undertake the management of my apiary on half-shares, supposing I found him in board and lodging? I think the district is good for bees if properly managed. By answering the above you will greatly oblige—Yours, &c.,

JOHN BAYBUTT.

Twelve Mile, Grey Valley, Sept., 1883.

[The market quotations for first-class honey will be found in the JOURNAL; if you have a quantity for sale we would advise yon to write to the Auckland Agricultural and Mercantile Company, who are cash buyers of honey in bulk; their advertisement appears in the JOURNAL.

With regard to whether it would pay you or not to get a man who "thoroughly understands the business" to manage your apiary, we think even if you could get such a man, which we are doubtful about just now, that in the present backward state of your apiary it would neither pay you nor him. We would advise you to get your apiary arranged on the modern principle, and procure the latest appliances such as comb foundation, honey extractor, smoker, etc., and get everything in good working order this season, so that you may be properly prepared to make a good start next season. By that time you will have gained more experience, and your apiary will be in such form that it would pay an experienced person to work it on shares.—ED.]

HONEY BEES IN EGYPT.

SIR,—Under the above heading I found, a few days ago, what appeared to me a very interesting paragraph in an old *Field* newspaper, under date of July 13th, 1878; and as I think every bee-keeper in New Zealand and the neighbouring colonies should do all that lies in their power to second the effort now being made to make this industry both a pleasant and paying one, I beg to contribute my mite, and trust it will be thought worthy of insertion.

BUMBLE BEE.

Paragraph in *Field*, July 13th, 1878:—"I wish to inform apiarians and entomologists of singular facts that have no parallel in my experience of bee-keeping. I have in my possession the observatory hive which won the first prize in the International Exhibition of 1851, at the close of which it was presented by the inventor—Major Munn—to the late Dr. Bevan, and at his death, at his request, was sent to me. I put into it an after-swarm in the month of June last year. On the 30th ult., 11 a.m., it threw off a prime swarm, which I easily hived in a bar-hive. At 2 p.m., however, I observed continued commotion about the parent hive, and shortly after I secured a second small swarm; on the 1st inst., a third swarm; and on the 2nd inst., a fourth. This last, being very small, and lodged in an orange tree difficult of access, I secured between two bell glasses, and to my astonishment I found five queens in it; these I separated by the use of chloroform. During the afternoon of Tuesday, the 4th inst., another large swarm was discovered on the same bough of a tree on which the prime swarm had alighted; this was evidently accompanied by several queens, because soon after hiving a persecution of them commenced, and I picked up several. Not only that; three others have since been forced out of the parent hive, all of which I have secured. Some of these swarms may have come from a neighbouring apiary, but can any person account for the superabundance of queens? I may add that the original family, and all the newly-hived swarms are working harmoniously and prosperously. The bees we have differ somewhat from the race in England; they are surprisingly docile, and I have not even worn a glove or any protection in hiving them.

"Since the above was written, the original hive has thrown off a very strong swarm, and the day after I captured six queens that they were driving out. The parent hive is now very weak, and the workers have for many days been persecuting the drones.—(Signed), J. HASELDEN, Bella Sombra, Alexandria, Egypt, June 10th."

[The superabundance of queens accompanying the last swarm, which appears to astonish Mr Haselden so much, is very easily accounted for by anyone who understands the habits of bees.

When preparing to swarm the bees start to raise several queens—there may be as many as a dozen. The majority of these may all come to maturity at the same time, when, if an after swarm issues, all but one will take flight with it. A number of queens more often accompanies the second after swarm than the first; we have repeatedly had four and six with an after swarm.—ED.]

TRANSFERRING.

SIR,—I noticed in your columns this month directions for transferring combs to frames, and in accordance therewith attempted to exchange the combs from a gin case to a Langstroth hive. I smoked the gin case hive gently at first, and then proceeded to drive the bees into an empty box. Your directions give fifteen minutes, but it took me an hour before I could dislodge them, and then I had to shake them out, so reluctant were they to leave, owing, I suppose, to there being brood comb in the hive. Next, having placed the swarm on the stand, I cut the combs out and laid them in the frames, tying them with twine. Unfortunately, the twine cuts into the comb—tape or broad slats of wood would have been better—and my combs being soft and brittle hung all awry in the frames as I put them into the hive. Seven frames about filled it, so I spread a sheet in front and shook the bees on to it, and they soon found their way in, as you have described. From first to last the operation took me two hours, and as the air was cool the young brood must inevitably succumb, I suppose, from the long exposure.

I should be obliged if you will kindly answer the following queries:—1st. How long should bees be allowed to fill themselves after being smoked? 2nd. Is open or close driving the quickest way to dislodge them? 3rd. Will not the birdcage wire cut into the combs like twine? 4th. What is the cause of the bees refusing to leave the combs, notwithstanding the stick-

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tapping and hammering when driving? My bees are on the North Shore, where they get pasturage amongst the gardens and wild flowers. The yellow wattle is a favourite with them. Most of the honey is obtained in spring; very little is got in summer and autumn.

I have lent your September number to the Italian Bee Company, who have an apiary at Parramatta, and the previous numbers to friends, who have a few hives in the neighbourhood, and hope your Journal may find more subscribers here.

"St. Leonards."

Sydney, N.S.W., September, 1883.

[1st. Bees fill themselves with honey very rapidly after receiving a puff or two of smoke; one minute will be ample. 2nd. We have driven bees both ways, but do not think there is any difference with regard to the time it takes. 3rd. We always use wire, and find it answers the purpose admirably. When combs are heavy with honey it is difficult to fasten them in the frames in warm weather. We usually cut off the comb containing honey when it is soft. We would advise you to straighten the combs by some means, and and insert some frames of artificial comb between them, gradually shifting the transferred combs to the outside as the brood hatches, finally removing them altogether; for there is nothing so objectionable in a hive as crooked combs. 4th. Most likely the queen, instead of being amongst the first to ascend, as is usually the case, hid down in one of the corners of the old box; the bees naturally remain close to their queens in time of trouble, and thus would be loth to ascend into the receiving box. In our early experience of transferring we have met with similar cases. We now do away with driving altogether, although it would scarcely do to advise beginners to adopt our method, as a person requires some little experience with bees before he would have sufficient confidence to make a nice clean job of transferring by our plan. However, for those who wish to try our method we will describe it briefly:—

After blowing a few puffs of smoke into the entrance of the box hive we remove it a few feet away from its stand, putting the new hive in its place. We now turn the box upside down, and with the smoker blow the bees clear of one side so that we can cut the combs free without injuring any of them. We then prize off the side and one end of the box and force the bees with the smoker to the opposite end, throwing a cloth over this part which tends to keep the bees quiet. The combs at one end are now ready for cutting out and transferring to frames in the usual way. If there are a few bees adhering to them we brush them into the new hive. By using the smoker when required we can drive the bees to the end, so that when the last comb is cut out they will be clustered like a swarm under the cloth, and can be hived in the usual manner.—Ed.]

MOVING BEES, &c.

Sir,—From the address below you will see that I have removed my apiary from Ormond, as I previously wrote you I intended doing. As the moving of bees is an item of interest to bee-keepers, and my way of doing it was simple and quite as successful as any I have read of, I shall give your readers the benefit of my experience. I sewed up each hive, minus top and bottom, in a piece of scrim; packed them in the bottom of a three-horse dray, piled up the tops and bottoms over all, roped all down tightly, and away they went over as rough a road as you could find, without breaking a single comb. It took three trips to get my eighty hives and piles of empty boxes and other plant removed. Fortunately it was fine weather; but I was just in time, for ever since it has been nothing but wind and rain, and bitter cold. Bees have perished in great numbers here, and all my hives have been much weakened. The outlook is not very bright, and when the clover comes into bloom shortly I fear we will be short of labourers to reap the harvest.

If you had 80 hives—50 of them weak and 30 fairly strong—would you remove frames of brood from the strong hives and build up the weak ones, so as to equalise the strength of the apiary, or would you let the weak hives take their own time to recover and take surplus honey from the strong hives only?

George Stevenson.

Upper Taruheru Apiary,
Waerenga-a-hika, Poverty Bay, 29th Sept., 1883.

[You have not stated how you packed the interior of your hives—that is, secured the frames. Were we in your position we would take the weakest of the colonies and unite them, even if we had to put three or four together to make one good one, and feed liberally to stimulate breeding. A few of the strongest of the weak ones we would reserve and strengthen with brood from the strongest stocks. When uniting take care of your spare queens, as you will find them valuable if increasing your stocks during the season.—Ed.]

FROM OUR CONTEMPORARIES.

MAKING OR FORMING NUCLEI.

Every bee-keeper who expects to be up with the times, and make the most from his bees, should have on hand, at this season of the year, several laying queens, held in reserve to supply any colony needing a queen at a moment's notice; especially where any method of increase other than natural swarming is adopted, reserve queens should be kept on hand to be given to the queenless part of the divided colony.

In order to keep these reserve queens, it is necessary that we have a nucleus or small swarm of bees in which to rear them, from the time the queen-cells are ready to be taken from the colony producing cells, till the queen is fertilized and ready to become the mother of a colony.

Many ways have been given for making a nucleus of bees, most of which prove to be a failure, and result in loss with the inexperienced. The one most commonly given in our books and bee journals is to go to any colony which can spare them, and take a frame of hatching brood and one of honey, together with all the bees thereon (being careful not to get the old queen), and place them in a hive where you wish the nucleus to stand; thus forming a miniature colony of bees. The hive is to be contracted to the requirements of the nucleus, and in 24 hours a nearly mature queen cell is to be given. This looks very pretty on paper, but when we come to put it in practice, it is found that in nine cases out of ten, so many of the bees will return that our nucleus is practically good for nothing,

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and often results in the chilling of all the brood in the frame, if the weather is cold. The other day, while in conversation with a bee-keeper having several years' experience more than the writer of this article, he remarked that his nuclei had "gone back on him," and when asked how he made them, he gave the above plan. I remarked that it was strange how young a bee would return to the old hive under such circumstances, when he said there was scarce a hundred bees left in his nucleus where he had put a quart or more.

If the above plan fails in the hands of a bee-keeper having 16 years or more of experience, how can it be expected that the novice will succeed with it? Several years ago, after repeatedly failing with the above plan, I had occasion to set a frame of bees and brood, on which was the queen, into an empty hive, and to my surprise nearly all the bees staid where I placed them. In a few days I returned the queen, and as the bees had become established in their new location, while the queen was with them, a good nucleus was the result. Thus I learned how I could form a nucleus which could be depended upon every time. Another thing I ascertained, that a colony having queen-cells considered such cells the same as a queen, and by taking a frame of brood which had a nearly mature queen-cell upon it, together with one of honey, bees and all, from such a colony, a nucleus could be formed so that nearly all the bees would stay where placed. Thus to make several nuclei, all I had to do was to count the queen-cells in the hive about the time they were sealed, then go to the other hives and take frames of hatching brood (brushing off all the bees), till I had as many as I had queen-cells, and place them in the hive having the cells. Two days before the queens were to hatch, cut out the cells and fix one in each frame of brood, and the next day make the nuclei by taking the frames to their several hives, giving each a frame of honey. In this way I rarely, if ever, had a nuclei "go back on me," and have so formed the most of my nuclei till the present season. This season I have adopted a new plan which pleases me so well I will give it to the readers of the BEE JOURNAL, so that they can share in my pleasure. Seeing a note in some convention report, of how a party had a queen nursery made so he could hang a frame of queen-cells in it, and then hang the nursery in a full colony of bees in the place of a frame of brood, I jotted down in my reference book [see former article on "How to use our Bee Journals,"] under the appropriate date, "Try forming nuclei in that way," giving page and bee journal where it was to be found.

When the time arrived I made a cage of wire cloth, which would hang in the hive, and large enough so that one frame would hang inside of the cage. I now got a frame of hatching brood, brushed all the bees off from it, hung it in a hive having a full colony of bees, and left it six days, when I had the cage pretty well filled with bees, and more hatching all the while, I now took it to a hive where I wished a nucleus to stand, took the frame out of the cage, placed a frame of honey by the side of it in the hive, placed the cage in empty side of the hive, so the bees which adhered to it could get with the rest on the combs, and I had a nucleus so formed that none of the bees could go back, for they had never had a flight. I was also independent of the weather, for a nucleus could be thus formed during quite cool days and nights.

Another thing which pleased me still more: The next time I tried I inserted in the frame of brood, before placing it in the cage, a queen-cell nearly ready to hatch. As this queen-cell hatched in a day or so, I had a queen five days old in my cage when I took it to my nucleus hive. In a day or two she took her wedding flight, and I had a laying queen five days after I formed my nucleus, thus making a great gain of time. I have written this in a hurry, and if all is not sufficiently plain, I will describe it further. All will readily see the advantage of the plan.—G. M. DOOLITTLE in *American Bee Journal.*

QUERIES AND REPLIES.

QUERY.—*Italian Bees—Sulphuring Combs.*—There is one or two questions I should like to ask you. 1st. If I were to get Ligurian bees could I keep them? The Acclimatization Society here had them repeatedly; sent by the firm of Neighbour and Sons, London, and lost them each time. Mrs French, of Moriveau, near Hamilton, had swarms sent from Melbourne, and lost them; likewise a Mr McIntosh, of Glendinon. 2nd. How about exposing frames of comb to the fumes of sulphur—how will that affect the brood? for my combs contain brood all the year round. HERMAN NAVEAU.

Hamilton, Victoria.

REPLY.—1st. Ligurian bees may be kept anywhere, the same as black bees, if they are properly looked after. In the instances you cite of Ligurians being lost, we suppose that if they had been common bees the result would have been the same. 2nd. We scarcely understand this question; fumes of sulphur should not be allowed near combs containing brood. We think there must be some misunderstanding on your part. The only mention we make of the use of fumes of sulphur, either in the JOURNAL or *Manual*, is in fumigating spare combs stowed away in winter in order to kill the larvæ of the bee-moth, or other insects that would destroy them.

QUERY.—*Bee Gloves.*—I should be very glad of a hint through your instructive journal as to the best kind of glove to wear when at work amongst the bees. Can india-rubber gloves be procured? I have been told they are a good protection. NOVICE.

September 12th, 1883.

REPLY.—Care should be taken that gloves made of any material that will absolve the poison of the bee sting are not worn. For not only will these gloves be injurious to the hands, but they will also give forth the odour of the poison, and so alarm the other bees, and cause them to fly from all points to the gloves, guided by their sense of smell. India-rubber gloves do not absorb the poison, but we do not think they are to be obtained in New Zealand. Having had several enquiries for gloves, we call the attention of Messrs. Bagnall Bros. and Co. to this matter, who, we have no doubt, will take steps to obtain some. In another column we give a clipping from the *British Bee Journal* on bee gloves.

QUERY.—*Parthenogenesis, Italianizing, Packing Bees, Drones.*—I would like to ask you one or two questions for answers through your correspondence columns. I have been reading a good deal lately about bees, my chief authority being the *Bee Keepers' Manual*, by Henry Taylor, revised by A. Watts, in which there seems to be a great many authorities quoted. They say if the queen of one breed is

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impregnated by the drone of another, it is only the workers of her progeny which turn out mongrels. Thus the introduction into an apiary of a single Italian queen is sure to be followed by the raising of pure Italian drones. Now (1) is this true? Could I Italianize an apiary with a single fertilized Italian queen? 2. What is the mode adopted in packing and carrying bees a long distance by sea? 3. Is there a time of year in which there are no drones in a hive. G. W. H. W.

Lincoln, Canterbury, Sept., 1883.

REPLY.—1st. It is perfectly correct that where cross fertilization of the queen has occurred the worker bees only will be affected by it, the drones being of the same variety or race as the queen mother. Dr. Dzierzon was the first to discover that only worker eggs are impregnated with the semen of the drone; and that queens which have never met a drone will lay eggs that will hatch into drones. This is called the Dzierzon theory, and is the fundamental principal upon which modern scientific bee-culture is based. Any good work on bee-keeping sufficiently explains this matter. It is possible to Italianize a large apiary with a single queen, but if there were black drones flying in the neighbourhood it would take a considerable time to get purely-mated queens sufficient to stock all the hives. Supposing the original queen to be pure and purely mated, the queens from her would be pure; but if *they* mated with black drones the queens of the third generation would be hybrids, and would produce hybrid drones, so that you would require to keep weeding out the impurely-mated queens, replacing them with purely-mated ones as you raised them. 2nd. The method we have adopted for packing to travel a long distance, and which we have found to answer, is the following:—We first prepare the body of the hive by nailing small battens on edge—we usually take end bars of frames—on each end of the hive inside, running from near the top to near the bottom. They are nailed just far enough apart to allow the frames to slide down between them easily. We next nail or screw on a bottom board, having four small fillets about 2in. long by ¾in. thick, nailed one on each corner for the hive to rest on; this leaves ¾in. space all round between the bottom board and the hive, which we cover with wire cloth to allow of ventilation. We next prepare a flat cover by sawing a large piece (9in. x 6in.) out of the centre, and covering the hole with wire cloth. We now make a kind of small box over a portion of this hole by nailing four pieces of 1½in. x 1in. battens on edge, letting them meet at the ends; this is to hold a sponge over which we tack another piece of wire cloth. All being in readiness, we go to the colony we are going to send away, and gently lift out the frames with the bees adhering thereto, and place them in the prepared hive in the same position they occupied in the original one. As the prepared hive will only take nine frames, when we come to the tenth we shake all the bees into it, and place on the cover and screw it down. It is now all ready, with the exception of pasting on the addresss and instructions to carriers about keeping the hive in a cool place, and watering the sponge daily. 3rd. Yes; at the close of the honey or swarming season the drones are killed off by the workers, as there is no further use for them. They again appear just before the commencement of the next swarming season.

We have a little Spider Plant seeds to spare, which we will send post free at 1s. per packet.

HONEY MARKETS.

AUCKLAND, November 1st, 1883.

The demand for extracted honey is very good. Prices at present are—for 1lb. tins, wholesale, 8s to 8s 3d per doz.; retail, 10d to 1s per lb.

AUCKLAND AGRICULTURAL AND MERCANTILE Co., Limited.

ENGLAND.

From advertisements in the *British Bee Journal* just received we gather that honey is still in good demand in England, at what we consider a satisfactory price, 1s to 1s 3d per lb. being offered for bright comb in large quantities.

AMERICA.

NEW YORK, September 10, 1883.

HONEY.—White clover and basswood in 1 lb. and 2 lb. sections, 18c.; dark and second quality, 14c.; extracted white clover, in kegs and barrels, 11c.; dark, 8c.

BEESWAX.—Prime yellow, 30 @ 31c.

H. K. & F. B. THURBER & Co.

SAN FRANCISCO, September 10, 1883.

HONEY.—There is a moderate supply of comb and extracted of common quality, but offerings of extra choice comb are very light. The sales being effected are within the range of unchanged figures.

	c.	c.
White to extra white comb	16	@ 20
Dark to good	10	@ 13½
Extracted, choice to extra white	7½	@ 8½
Dark and candied	6½	@
BEESWAX—Wholesale	27	@ 28

STEARNS & SMITH, 423, Front-street.

—*American Bee Journal.*

OUR HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of July, 1883, amounted to £7,496.

—*British Bee Journal*, September 1st.

SPECIAL NOTICES.

NOTICE TO BEE-KEEPERS.

Mr H. H. Hayr wishes us to state that he keeps on hand and for sale all kinds of apiarian appliances. We believe he is agent for Messrs Bagnall Bros. and Co.'s bee-keepers requisites. His advertisement appears on the cover.

QUERY AND REPLY DEPARTMENT.—Correspondence for this department should reach the editor not later than the 15th of each month, when replies are required in the next issue.

ADVERTISING DEPARTMENT.—Advertisements for the next issue should reach the publisher by the 24th of each month.

Correspondence for publication may be sent at book post rates *i.e.*, one penny for every two ounces, providing the book post regulations are complied with, and the words "Press Manuscript" are written on outside of cover.

Our Correspondents will oblige by writing articles for publication on one side of the sheet only.

P.O. Orders for Subscriptions, Advertisements, &c., to be made payable to J. C. Firth, Chief P.O., Auckland, and sent under cover to H. H. Hayr, High-street, Auckland, or P.O. Box 186.

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Single Column.	£	s	d	Double Column.	£	s	d
Three lines	0	1	6	Page	2	10	0
Per line afterwards ...	0	0	6	Half page... ...	1	7	6
Inch of space	0	3	6	Third of page ...	1	0	0
Quarter column... ...	0	8	0	Quarter page ...	0	17	6
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6 „ ...	10 „	24 „	30 „

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THE NEW ZEALAND AND AUSTRALIAN

BEE JOURNAL.

Devoted exclusively to Advanced Bee Culture.

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CALENDAR—DECEMBER.

THE weather during the three months of spring now past has been the most extraordinary we have ever experienced; it would not have required a great stretch of imagination at any time during the above period to have supposed oneself in the depth of winter. With the exception of a fine day or so occasionally—which were very rare indeed—there was nothing at all to indicate that we were passing through the spring months; on the other hand, the retarded growth of all vegetation, the heavy and continuous rainfall, high winds, and low temperature made one look upon it in the light of a prolonged winter. Up to within about ten days ago there was scarcely a clover blossom to be seen, and now that there is a considerable number of flowers about, owing to the low temperature and the want of sunshine, there is no sacherine matter being secreted in them. Looking at it from an apicultural point of view, the season so far has been the worst we have ever known, and we trust we shall never have such another. However, we still have hopes of the season improving and being able to take some surplus honey, for should the weather become settled and the temperature rise it will take but a very few days to cause an abundance of honey to be secreted, when every advantage must be taken to secure as much as possible. Although everything appears to be against the bee-keeper just now, this by no means should prevent him giving the proper care and attention to his bees and keeping them up to the mark, for directly the opportunity occurs for them to gather honey he will be well repaid for his trouble. It has often been remarked that, in seasons like the present one, if a few fine days set in there appears to be a greater amount of honey secreted in flowers in a given time than in ordinary seasons; and it is astonishing the amount that will be stored by strong colonies in a few days when there is an extra good flow on. In concluding the above remarks we can only repeat what we have often said before, in anticipation of a good flow of honey coming—"Keep your stocks strong."

The instructions given in the preceding calendars will answer for this month; but there is one important thing

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we would advise, that is, should fine weather set in and with it a harvest of honey, to be very cautious about increasing the number of colonies. Bees are very apt to get the "swarming fever" the first opportunity they have after being kept back so long, and if this is not prevented it will most likely result in the loss of all surplus honey that might otherwise be taken, and the apiarist having to feed his bees to prepare them for winter. Directly it is discovered that honey is being gathered in fair quantities the surplus arrangements should be put on at once, and the brood apartment examined occasionally for queen cells, which should be destroyed when found. If any of the strongest colonies show signs of swarming, a frame of brood removed occasionally will often cure them of the desire; the brood can be given to others. We have, sometimes, in order to keep down increase, when a colony has persisted in building queen cells after we have destroyed several, allowed it to swarm naturally, hived it, cut out *all* the queen cells in the parent hive, removed one or two frames of brood, and placed the hive containing the swarm underneath it, gradually working the remainder of the brood below. This has had the desired result, *i.e.*, of curing the bees of the swarming mania and preventing increase.

Our Own Apiary.—Our bees are in good condition—thanks to the supply of food they have had—and already to take advantage of the first chance to gather a crop of honey. As yet they have scarcely gathered enough to maintain themselves, and we have given them spare frames of honey left over from last season. On looking through our notes we find that on the 6th of October several of our colonies (Italians) were preparing to swarm, and had queen cells well advanced; these we intended to swarm artificially on the following day, but very bad weather set in and we were unable to examine them again until the 19th, when we found that they had destroyed the cells and the old queens were still in charge. With the outlook at that time of everything being very backward, we concluded not to attempt any artificial swarming till we saw the honey season had fairly set in and the bees swarming naturally; this has not yet come about. Up to the time of writing we have only had three natural swarms, and these we have been obliged to feed. We hope, however, for better things this month.

We have just received an Italian queen that first saw the light, and was fertilized in Italy. She is darker than many of our own breeding, and very small, but no doubt her size is attributable to her long confinement and rough usage which would retard the development of eggs in her ovaries. The bees that accompany her are similar in all respects to those we have bred from the queens imported from America. Great difference of opinion exists as to the appearance of pure Italian bees, and we are very glad to have had the opportunity of comparing those of our own breeding with bees from a queen imported direct from Italy, and we are pleased to say that our own does not suffer by the comparison. We expect shortly a small trial consignment direct from Italy. We had imported previously twenty-two colonies from America.

If the parent stock is weak in the spring the early honey harvest will pass away, and the bees be able to obtain very little from it.—*Langstroth.*

AN IMPORTANT CONTRIBUTOR.

We have very much pleasure in stating that our old and respected friend Mr R. Wilkin, of San Buena, Ventura, California—the engraving of whose apiary adorns our front cover—has kindly consented to contribute regularly to the columns of the Journal as soon as he has finished preparing for market his last season's honey crop. That this must be a pleasant, but not a light task will be understood when we state that he secured no less than 24 tons from his two apiaries of 1000 hives. Although, as far as we are aware, Mr Wilkin has not been in the habit of contributing to the Bee Journals, we believe there are very few, if any, apiarists living more competent to give sound practical advice on the management of an extensive apiary on scientific principles.

The subject chosen by Mr Wilkin for his future papers, viz.: "The Progress of Bee Culture in the United States during the past 25 years," is one that cannot fail to prove highly instructive and interesting to the bee-keepers of Australasia; and, as he informs us that he will quote from his private business journal kept during these years, we shall look forward with pleasure to the time when it will be convenient for him to forward his contributions.

THE JOURNAL.

With this issue ends the first six months of the Journal's career. We hope the few of our patrons whose subscriptions expire with the present issue are so far satisfied with our efforts that they will renew them at once, in order that there may be no break in the delivery.

We are glad to inform our readers that the Journal is gradually getting a very wide circulation; it is already being sent to all parts of the Australasian Colonies, England, Canada, and the United States, and as far as we can judge at present there is very good prospects for it in the future.

SWARM CASE.

We beg to tender our thanks to "T.J.M." for his present of the "Swarm Case" that was exhibited at the Auckland Agricultural Show last month. We shall take the first opportunity to use it and report. The description of and method of using it is given by "T.J.M." on page 40, October number.

OUR TELEGRAPHIC ADDRESS.

The Matamata estates, and in fact the whole of the Upper Thames Valley, have now been put in rapid communication with the outside world by the spirited enterprise of Mr J. C. Firth, who has erected, at his own cost, a telephone wire extending from Matamata to Waiorongamai, a distance of twenty miles. This wire connects with the Government telephone and telegraph lines, and has already proved of great service to the residents of the district. Our telegraphic address in future will be—Matamata, Waiorongamai. The mail address being the same as heretofore.

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CLIMATE AND BEE CULTURE.

BY T. J. M.

(*Continued.*)

TURNING our attention to the mean temperature of the summer months, we find that those countries we have named as famous for honey in the South of Europe and in Asia Minor, lie between the isothermal line of 66deg. and that of 77deg., which is the boundary of the torrid zone, while Palestine, Egypt, and Assyria, lie within the latter, the mean summer temperature of Cairo being given as 84deg., and that of Bagdad as high as 93deg. That of Rome on the north, and of Africa on the south of the Mediterranean, is equal—namely, 74deg, and the principal islands in that sea have probably about the same temperature. Tracing the line of 68deg. from the north of Spain westwards, we find that it dips down to the Azores, rising again traverses Canada and the most northern of the American states at a high latitude, and declining again as it crosses the western states; passes through California at San Francisco, where it is nearly coincident with the winter mean of 50deg. In the Southern Hemisphere it passes through Chili at Valparaiso, south of the Cape of Good Hope, and through the Colony of Victoria and the Province of Auckland,—all in a line nearly coincident with that of 50deg. mean winter temperature. The northern parts of Auckland Province, and the Australian colonies of Victoria, South and West Australia, and New South Wales, lie within the same limits of summer temperature as Asia Minor, Greece, Italy, Spain, and the African shores of the Mediterranean; from Auckland southwards to Otago, and in Tasmania we find those gradations of summer temperature which stretch in the Northern Hemisphere from central France, Switzerland, and South Germany up to Scotland, while Queensland lies within the torrid zone, like Palestine and Egypt.

Thus we find that on the western Coast of both North and South America, and in the Southern Hemisphere, generally speaking, the countries which have a mean winter temperature of 50deg. to 51deg., have all a mean summer temperature of 67deg to 68deg., the range being only 16deg. to 18deg.: while those in the south of Europe and west of Asia, with the same winter temperature, show a summer heat varying from 68deg. to 74deg., and rising even to 93deg at Bagdad, the range being from 18deg. and 24deg. in general, and as much as 43deg. in the latter place. Owing to the peculiar distribution of land and water in the Northern Hemisphere, the Gulf Stream and other ocean currents, and the atmospheric movements connected with these, the isothermals are by no means parallel to the equator, or to each other at different seasons in the eastern half of North America, the whole of Europe, and the interiors of Asia. For instance, the lines of 32deg. winter, and of 77deg. summer temperature, which, at the longitude of Greenwich, are separated by some 40deg. of latitude, approach each other very closely in part of America, so that New York and St. Louis show a range of 42deg. and 41deg. respectively, between their winter and summer temperatures, and in Asia those lines actually overlap each other at Pekin, which shows an arctic winter temperature of 27deg., with a tropical summer heat of 79deg., the range being so much as 52deg. Similar cases do not occur at all in the Southern Hemisphere. The comparatively small tracts of land which lie within the southern temperate zone show isothermals much more nearly parallel to the equator and to each other at the different seasons of the year, and the range between mean winter and mean summer temperature only varies from 16deg. to 20deg.; so that if we are told the mean annual temperature of any place, we may safely conclude that the mean winter is not more than 8deg. to 10deg. lower, and the mean summer not more than the same amount higher.

I am afraid that the above may be considered a very dry statement of facts already known to all who may take the trouble to look into them, and it may be asked what has all this to do with practical bee-keeping? I venture to hope, however, that it is all capable of a practical application, especially for those who are desirous of raising bee-keeping to the rank of an important industry in these colonies. We want to know in how far we may consider ourselves as enjoying natural advantages equal or superior to those of other countries; we find that as regards a winter temperature we may safely consider ourselves in that happy position; but when we come to compare the summer temperatures we meet with the anomalies I have above described. Now it remains an important question for us to understand whether with the same winter temperature as another place, but a more moderate summer heat, we are more or less favorably circumstanced as compared with that place. It would appear to me that, within certain limits, the more moderate summer heat accompanied by sufficient moisture must be more favorable for the production of honey than an extreme or tropical heat which is generally attended with a scarcity of moisture. As regards the tropical summers of Palestine and ancient Assyria some interesting questions present themselves for consideration. How far may the effects of the summer heat be modified by the peculiar position of each of those countries, the former in the valley of the Jordan, considerably *below* the ocean level, and sheltered by high land on each side, and the latter with its vast plains so richly watered by the Euphrates and Tigris rivers? And again, are those countries at present really as productive of honey as they were in the time of the Patriarchs? Or has the climate been considerably altered and rendered less fertile as is generally supposed to be the case in Asia Minor owing to the destruction of all the forests and the neglect to replace them by plantations?

(To be continued).

Bay View Apiary, Kati Kati.

APIARY BOOK-KEEPING.

IN answer to our request on page 29, September number, our esteemed correspondent, "T.J.M.," has sent us a copy of an opening of each of his books—Day-book, Register of Stocks, and Produce Register, which we have much pleasure in publishing. We give the two former in this number, and the latter will appear in next issue.

These books are very well arranged indeed, but, as our correspondent remarks, if the manner of recording details could be simplified, it would be a great boon. If a simple form of register can be decided upon, we will take steps to have some printed, &c., for sale. Our readers, by referring to the paper on "Apiary Book-keeping," in September number, will understand at once the method of recording details.—ED.

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REGISTER OF STOCKS.

——Apiary. Season 18——18—— Hives No.——to——

No. of Hive.	Date when Hived.	Weight of Swarm. lbs.	Age of Queen.	Whence obtained.	Remarks.	1st Swarm.				2nd Swarm.				3rd Swarm.			
						Date.	Weig't lbs.	Age of Queen.	Where Hived.	Date.	Weig't lbs.	Age of Queen.	Where Hived.	Date.	Weig't lbs.	Age of Queen.	Where Hived.
1			82/4	From last season	1st Nov. united with	14/12/82	6	?	No. 24		No.	after	swarms				
2			81/4	do.	[swarm from bush				Did	not	swarm		United to				
3			82/4	do.	Strong colony	22/12/82	8	82/1	No. 27	31/12/82	3½	82/4	No. 25				
4			82/4	do.	Weak	26/11/82	6	82/1	No. 18	7/12/82	4	82/4	No. 24				
5			82/4	do.	Moderate	16/11/82	6½	?	No. 17		No.	after	swarms				
6			82/4	do.	Strong								United to				United to
7			83/1		Moderate	31/10/82		(lost)		11/11/82	3	82/4	No. 14	21/11/82	2½	82/4	No. 21
8	15/10/82	6		Driven from old box hive	Very weak	11/1/83	8	?	No. 29		No.	after	swarms				
9																	
10																	
11																	
12	31/10/82	10	83/1	Shaw's bush	Strong, worked with 2 supers	1/1/82		(lost)		9/1/83	4¼	83/1	No. 26				

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Apiary. DAY-BOOK. Hive No.

Date.		Memoranda of Events.	Honey Taken. Ext.	Comb.
1882		Season 1882-83.		
October ..	31	Hived swarm from Shaw's bush, 10lbs weight, on 10 frames of comb foundation—queen strong, but age unknown		
November	5	Frames all worked out, put on super with 10 frames of comb foundation		
,,	13	Extracted 2 frames	8	
,,	20	,, 4 ,, ...	16	
,,	22	,, 2 ,, bees working very well ..	8	
,,	30	,, 5 ,, destroyed queen cells	18	
December	2	Put on third box, between hive and super, with 10 frames c. f.		
,,	11	Extracted 2 frames	7	
,,	13	,, 4 ,, ...	14	
,,	18	,, 4 ,, ...	13	
,,	28	,, ,, ,, ...	15	
1883				
January ..	1	Large swarm absconded, there being no one present at apiary. New queen dates from this time.....		
,,	3	Extracted 4 frames. Took out queen cells	11	
,,	6	Extracted 3 frames. Took off top super	7	
,,	9	Extracted 1 frame. An after swarm came off, 4½lbs weight, which was given to No. 26	2	
,,	22	Extracted 7 frames	31	
April	29	Took all frames out of super; put bees down into hive, covering with mat; put back frames, partly extracted to be cleaned in super	4	
May	6	Removed super and made all snug for winter		
			154	

Date.		Memoranda of Events.	Honey Taken. Ext.	Comb.
1883		Season 1883-84.		
July	1	DAY-BOOK. This form should be printed on good common Account-book Paper, not too thick, blue ruled. Each folio, like this sample, should serve for one hive for two or three seasons. It would probably be convenient to bind the book with 100 folios, in a strong paper cover, like a school exercise book. Apiaries with more than 100 colonies should then have a Day-book for each 100.—T.J.M.		

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BEE-KEEPING IN AMERICA.

BY R. WILKIN.

TWENTY-FIVE years since, while at college at Wilmington, Pa., I attended an agricultural show, where, for the first time, I saw bees on exhibition. They were managed by Seth Hogeland in a moveable comb hive, which had been invented by L. L. Langstroth, in America, in 1852. On seeing Mr Hogeland lifting the combs from his hive with queen and bees adhering, handing them around to the spectators without anyone even being threatened with a sting, it occurred to me, if bees can be made so docile and the combs movable, the bee-keeper can learn all about the internal operations of a hive and know the condition of each colony at all times, and being thus informed can control them according to his intelligence. With these advantages I could see that a new system of management would be adopted and the entire business revolutionized. I was completely charmed with the new thought and loitered about the bee-hive most of the day; this day was the one which decided me in my occupation for life, for ever since I have done but little except work vigorously with bees.

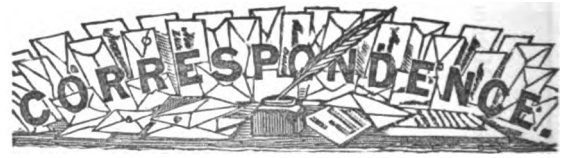
It seems necessary to the success of the bee-keeper that he, in the first place, becomes thoroughly informed on all matters connected with his pursuit; then to muster all his energies, putting them and his very being into the business. Bee-keepers are generally great enthusiasts and take special delight in their calling. I assure you it was with no small degree of enthusiasm that I engaged in it, and on reflection I can see there was quite an amount of adherence to purpose in my make up, or I would not have persevered through the many difficulties that have attended bee-culture in this country during the last 25 years.

Since you, Mr Editor, have asked me to contribute to the JOURNAL I have concluded to give some history of the development of bee-culture in the United States as seen in my experience. As notoriety so far from home can be of no pecuniary service to me, I only consent to write some for your readers because I think it will be appreciated. You know everyone loves to be appreciated, and I think I am able to give many hints of real service to bee-keepers in your lands commencing, as they now do, where we were twenty years ago.

A Bee Journal is a necessity for keeping up communication between apiarians on all matters connected with their growing pursuit. I dislike profuse laudations of the first efforts of a new paper, but the first number of THE NEW ZEALAND AND AUSTRALIAN BEE JOURNAL which I have received, I think is quite creditable to the editor and publisher; and, judging from the considerable knowledge I have of its editor, I have much confidence in the JOURNAL becoming a valuable medium for conveying information on bee-culture. The *American Bee Journal*, the first paper on the subject of bees published in the United States, commenced about the year 1860, and soon after had to suspend publication for want of sufficient support—the trouble was our war. In a year it resumed, and I have had the satisfaction of reading it for eighteen years. *Gleanings*, now perhaps the most popular bee journal in this country, started some 10 years since with eight little pages, published every four months, at 25c. (1s.) per annum. Our Californian *Apiculturist* started over one year ago, but is dead already. Quite a number of bee journals have sprung into existence and died, so I feel inclined to help a new one started where it is so much needed. I can hardly imagine how bee-culture in this country could have reached its present proportions without the stimulating and enlightening influence of bee journals.

San Buena, Ventura, California, August, 1883.

[WE take upon ourselves to say that Mr Wilkin may rest assured his contributions to the JOURNAL will be thoroughly appreciated by the bee-keepers of this part of the world. We are already under obligations to Mr Wilkin for valuable information in connection with bee-culture, and can testify to the readiness with which he will give advice, on any point, to a young bee-keeper. Being with regard to bee-culture in our infancy here, as compared with America, we require a guiding hand, and we know of no one better able to guide or lead us than our old friend, Mr Wilkin.—ED.]



(*For the N. Z. and A. Bee Journal.*)

All correspondence must bear the name and address of the writer, not necessarily for publication, but as a guarantee of good faith.

STANDARD FRAME.

I HAVE only just returned from England, so have not had an opportunity of saying anything on this very important subject in previous numbers. There is no doubt of the advisability of our adopting a standard frame as soon as possible. If we do so, manufacturers will make them all alike, have them always ready to supply orders, and will be able to sell them much cheaper than if there were several different sorts. Since the British Bee-keepers' Association decided on a standard frame, nearly all makers supply them with their hives, and I know that you can buy standard frames dovetailed for one shilling a dozen in many places, and never pay more than one shilling and sixpence per dozen for them, as those prices would not pay any one to make his own. The question is what size to adopt, and here the choice lies between the Langstroth — which is virtually the standard for America, and the British standard. I have tried both, and I like the British the best. The Langstroth I think a little too long, more particularly when the frames are hung across the hive (parallel to the entrance); and this method of hanging the frames is the most approved in England at present. I was at the Exhibition held by the B.B.K. Association at Knightbridge, in July, and nearly all the hives exhibited had the frames hung in that way, and were all British Standard size: 14 x 8½ (outside measure), with a top bar 17 inches long. It is true that these frames will not take the 4½in. x 4½in. sections exactly, but we can either use sections, 4in.x4½in., as are commonly used now in England—six of which will fit the standard frame—or what is, I think better, use a wide frame without top bar, and with tin bottom, which will take the 4¼ x 4¼ sections nicely. This frame

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was illustrated in the *B. B. Journal* for December, 1882, page 172, and seems to be all that can be desired. These frames can be either hung at back of other frames in a hive or in an upper story. I always use long double-sided hives similar to Abbott's Combination, which are very cheap, and I find bees winter splendidly in them. Were I to adopt Langstroth frames I would have to make my hives 21in. wide by 25in. long, instead of 18in. x 25in., which I now use, and this would make the hive too clumsy. The B.B.K. Association discussed the matter from all its bearings, and finally decided on the 14 x 8½ frame as the most useful and handy to manage.

C. S. Bailey.

Christchurch, 29th September, 1883.

P.S.—There is a frame in very general use in Canterbury which measures 16in. x 9½in., with a top bar 18in., which is also very good.—C.S.B.

THE STATE OF THE HONEY MARKET IN DUNEDIN.

Sir,—Being somewhat enthusiastic in bee-keeping, I naturally take some interest in—I had nearly said *your*, say—*our* N. Z. Bee Journal, being also a storekeeper's assistant, I thought it would be an easy matter to forward you a quotation from this city of honey prices current, but I can assure you I was never more surprised than when I began to make the necessary enquiries, found that really not a merchant had any honey to quote. Last autumn my fellow storeman informed me that while I was out "a party from the north" had called in to know if we would buy any honey as he had a ton or two for sale and would be glad to get quit of same for 4d. per pound, "first-class." I may state that we bought from a merchant in Oamaru close on half-a-ton of really fair honey in casks for 4½d. per lb., last summer. I have heard that in the inland (from us) districts there are "loads of honey going begging for 2½d. per pound," but I can assure you that none at that price has come along here yet. We filled the greater part of ours into empty pickle bottles, costing 1s. 6d. per dozen, and holding, say 1¾lbs., and sold same readily for 1s. each.

Again, a neighbouring fruiterer had, last fall, a lot of honey in section boxes, which he tells me did not sell readily, and which he declares to be "a bothering mess, the least thing causing the honey to run over everything." One of our merchants quoted 1lb. tins at 6s. per dozen—tins being made and filled by themselves, but with what I really could not say.

Now all this you will admit is very vague, and shews clearly that a market for really good honey needs to be made here. I never was in Auckland, but I look at it like this: You northern people have the best of us for a bee climate, and we ought to be the best market. In fact I have grave doubts as to whether, in the long run, we shall ever successfully compete with you in bee-keeping. However, I am going to have a try, though I have made a poor start, as likewise is a friend of mine who, I believe, has written you (Mr Brickell), who, by-the-by has made a better "first attempt" than I have. Last summer I had 9 hives in the old box style—2 of these I sold—which I became in the autumn very desirous of transferring to the Langstroth frames. I risked doing so to my cost, for I now re-commence this spring with one hive if not a sadder a wiser man.

So my advice is *always transfer before midsummer*, and avoid robbing if you possibly can.

I have much more to write you, but as the mail goes early this morning I will reserve for some future occasion what I would now like to say. My wish is that you were more central, so that we could get down some of your Italians with some show of success.

Wm. Chs. Brown.

Maybank, North East Valley, Dunedin, Oct., 1883.

[We are obliged to our correspondent for his report of the state of the honey market in Dunedin. It is such reports as this that we are anxious to have from all the leading cities throughout Australasia, so that bee-keepers may be made aware of the likeliest markets for their produce. We have found it very difficult to get an idea of what is being done in honey in any place from any one merchant or tradesman; the only way that we can see at present until a regular market is formed, is for persons who are interested in the matter, like our correspondent, to do as he has done, make enquiries from a number of merchants and tradesmen in different localities and report through the Journal; by these means we may form an approximate idea of the demand in our home markets for a good article of honey, and thereby take advantage of the knowledge to obtain the best rates for our produce.—Ed.]

FEEDING AND UNITING.

Sir,—I am exceedingly obliged to you for taking the trouble of writing me a special letter of advice, and have lost no time in putting your instructions into practice. I am afraid I have not fed sufficiently. I gave them 100lbs. of sugar which was soon consumed, but seeing so many bush flowers out I gave it up. I now see I should have fed right along, as the weather is still wet and cold, and the hives have little or no honey in them. In uniting the hives, I left on the stand a nucleus hive in which I put the queen and one frame of bees, removing the brood and the rest of the bees. I take it this is the way to save the queen. Any flying bees would also remain with her. I have united all hives with bees on only three or four frames. Where they covered five or more I have not meddled with them. I expect to finish to-morrow, and will then have about 50 fairly strong colonies.

I visited two or three bee farms last week, and with one exception, found a most deplorable state of matters. At Roseland the bees were dying wholesale. Out of 450 hives last season not much over 100 were alive. Mr T. U'Ren's apiary at Te Arai was the only one where the bees were in good condition. He had lost a good number, but had 170 with plenty of bees.

It is strange to have to feed bees to keep them from starving with abundance of blossoms all round. Last month there was the birch and pouriri, and now cabbage trees, gnaios, karakas, and lawyer are all in bloom, and yet there is hardly a pound of honey in the hives. Near Gisborne, where the soil is light and warm, clover is in bloom, but here only a stray head here and there is to be seen. At this time last year I was taking swarms and the surplus boxes were filling up. I look to the thistle to give us our main crop this season. They are coming up in myriads round about

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here and when they flower in January the bees will have recovered from the effects of the miserable spring weather.

In a location such as mine bees should give a large surplus. Within a mile on one side is a range covered with manuka and light bush; the apiary is sheltered by a small bush of 20 or 30 acres; other clumps are scattered about within reach; while belts of cabbage trees and flax grow in the swamps, and all the rest is clover and thistle. No doubt the sheep dispose of most of the clover, at this season, but if we get a few weeks of hot weather they can't keep it down.

You ask me how I packed the interior of the hives when moving them. I didn't pack them at all, but saw that each hive was full of frames, so that they couldn't shake out of their place. The only breakage I had were sheets of comb foundation in empty boxes. It is very brittle in winter, and a good many sheets were cracked along the top.

I have just got a Bingham Smoker from America. It is far superior to the Simplicity Smoker. I lit it this morning and it burned all day by just putting in little chips of stick now and then. I don't use the smoker very much, but the old one was always out when wanted, whereas this one puffs away like a locomotive from daylight to dark. It would suit Mr Thomas and others of your correspondents who keep those savage sort of bees that fancy themselves smoke-proof. I find my bees very easy to handle, and that I don't need much smoke except when uniting hives—when they are inclined to be nasty.—I am, &c., GEORGE STEVENSON.

Upper Taraheru Apiary, October, 1883.

[We cannot understand how you could move your hives a long distance over a rough road without killing all the bees if the frames were not secured in some way from shifting and kept the proper distance apart. You say that each hive was full of frames so that they couldn't shake out of their places. By this we take it that the combs were jammed together, then how did the bees fare? Will you please explain?—ED.]

HONEY MARKET IN INDIA.

SIR,—I enclose a cutting from the *Daily Telegraph*, of September 3rd, 1883, just to hand. It may interest some of your readers, especially as to there being an Indian honey market and a variety of stingless bees in the far East.

Being a bee-keeper for over 30 years, I had intended to have corresponded with the JOURNAL; but, unfortunately, various engagements and expectation of removal have prevented my experimenting as I had proposed doing. My first Ligurians I received about the year 1861, from the late Mr Woodbury, of Exeter, who was a learned writer on bees, and inventor of hives and a personal and much respected friend of the writer's. If all be well as soon as I am settled I hope to go in for some experiments suggested by the Rev. Mr Filleul, formerly of Weston-Super-Mare; until that time I must be content to be a reader of your BEE JOURNAL, which I hope will meet with the success it deserves.

To anyone that wants a hobby I would say go in for bee-keeping; it is not a very expensive one in this country. With my temperament I have found it wonderfully fascinating, and I have sat days together looking at the bees at work both in and outside the hives. Over twenty years ago I *saw* the bees sting a queen I had put in a hive; some time after, friend Woodbury told me this—at that time doubtful proceeding on the part of bees—had been proved to be a fact, and then I told him of my experience, fear of ridicule had prevented me doing so before. I sent Mr W. from Dartmouth *by post* a queen with a few workers. She was dissected with another one morning under a powerful microscope for useful information which I may some day tell you.

J. NEWLAND.

Ngaroto, October 18th, 1883.

Bee-keepers will be interested to know that, according to the results of recent inquires made by the Government of India, a large market for their produce appears to be open in our Eastern Empire. This at any rate is certain, that honey is everywhere in demand throughout the peninsula for domestic, medicinal, and sacrificial purposes, and that at present no attempt has been made by indigenous industry to meet it. The Oriental, wherever you find him, is a great consumer of sweets; and, just as the British workman turns naturally to a public-house to spend his spare halfpence in liquid refreshment, so the Eastern, seeking to recruit himself after a bout of work, looks out for the nearest lollipop stall. An occasional lump of sugar-stuff will keep a messenger on the road all day without complaint, and suffice during a protracted trial to keep the most unwilling witness in his place under the trees outside the court-house as long as the contractor for his services chooses. A master will reward his servants with a basketful of sweetmeats; a native gentleman regale a visitor with bonbons. Even the day-labourer, the coolie, the nearest Eastern equivalent for our navvy, will extend his hours beyond the proper time with cheerfulness, if candy be the inducement to stay. Moreover, just as in the West we have hot-cross buns and pancakes, goose and plum-pudding, to mark our feast days and our fast days, so in the East they have their confections of sugar and aromatic seeds appropriate to high festivals and holidays. Under the trees, wherever a fair is being held, one of the most conspicuous and attractive features of the day is the sweetmeat-making. Stalwart men take up great armfuls of the half-kneaded compound and hoist it on to the cross-bar between poles erected for the purpose, or else upon the branch of a convenient tree. Its own weight makes the big lump gradually settle and sink down over either side of the bar or branch, and gradually elongate itself into hanging ropes. These the men seize, and, pulling them out to the full extent of their elasticity, throw them up over the bar again. Each thus takes hold alternately of the other's rope, and the regular cadence of the song which they sing as they work up and temper the sweetmeat, and the concerted swaying of their bodies as they advance to seize the dependent ropes and step back to stretch them, seems to have a special facination for the crowd. For they will sit, all grown up men perhaps, and watch the preparation of the "Mehti," which they hope later on to eat, with as much solemnity as if they were assisting at a pious rite. And by and by the confection will be pronounced complete, and then, up and down in the shade of the grove and in and out of the booth, little children will wander shrilly crying the wares they have to sell, "Sweet, oh! sweet — and all fresh," and the strong men under the trees will have to labour hard and long to keep the supply equal to the day's demands. Nor should it be forgotten that in religious offerings also, candies play an important part. There is nothing the deities like better than lollipops—so, at least, the priests tell such votaries as cannot afford more costly offerings—and the shrines are, therefore, liberally supplied with sweet confectionery.

Now, honey is an important ingredient of many of those things for which Orientals, both human and divine, have such a sweet tooth; and at present the amount in the market is nowhere commensurate with requirements. Medicinally, as a gargle, and a cordial especially, the bees' treasures are in

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equal demand in all the Presidencies, but are not always obtainable when wanted. Yet India has been specially favoured by nature in the matter of bees, for the indigenous varieties of those insects are very numerous. The Hindoo, however, classifies them much as children classify bears—there are, they say, big bees, middle-sized bees, and little bees; and the first two kinds are of no use for domestication, as they have stings. The third, they say, might be of use for hiving, but unfortunately it is very small. Some describe this stingless insect as "a quarter the size of the house fly," others "about as large as a mosquito," while one says "it should perhaps be called a gnat rather than a bee." This delightful innocence of entomology is not more refreshing than the Oriental's idea of the sting of the bee being a fatal objection to its utility under cultivation. But we should not forget that he wears very scanty clothing, and that few of us, even the most expert, would care to go honey taking with no more personal protection than a waist-cloth round the loins, and a dab of yellow paint on the forehead. It would require something more than even the sang-froid of a professional bee-keeper to venture among the angry hives in such Garden of Eden apparel, and a good deal more than good manners in the insect to forbear attacking such an extent of undefended surface. There remains the fact that India possesses several breeds of bees which have no stings. We should like to hear some disciple of Darwin explain this development of the inoffensive bee. It would be simple enough if the people of India were all hide-bound like their rhinoceroses, or went about iron-clad, for stings would then, no doubt be given up by the insects as being of no use; but considering as we have already said, that their costume is so carefully adapted to the climate, and that the provisions to attack are so copious and extensive, the natural fact justifies some surprise. We could have understood the Indian bees having tips to their tails like scorpions, or being all sting; but, when it comes to their deliberately doing away with "the business end" of their bodies, we are compelled to credit the bees with a measure of good taste and magnanimity that entomologists have not hitherto done justice to. These harmless honey-makers, however, produce but poor stuff, and little of it, though in fairness to them it should be said the native has not tested their capabilities with any remarkable degree of judgment or intelligence. Our own apiarists, for instance, will agree with us that to tie a string round the waist of a queen bee and then tether it down inside a hollow tree is at best a crude and primitive way of attracting the future hive—especially so in a country where the ant, "edax rerum," is omnivorous and omnipresent, and where lizards and large spiders, the particular enemies of bees, swarm in hollow trees. What the result might be under more scientific treatment remains, of course, a matter of conjecture; but meanwhile it may be accepted as established that the majority of the inoffensive species give only an inferior quality of honey, and that the quantity as compared with that of the insects which are less pleasant to handle is inconsiderable. It would seem, therefore, that if the experiment of apiculture in India is ever to be made in earnest, it must be made with the bees that have stings, and here the possibilities of yield appear to be almost without limit. At any rate, the quantities said to be produced by wild swarms of some of the larger and more ferocious kinds are so large as to be almost incredible. What, for instance, would our English hive owners say to a swarm that could produce in a year, without any artificial attention, two hundred pounds of honey and half as much wax? or to a wild rock bee that stores up, without assistance or any incentive beyond its own instinct for industry, an average of forty pounds in a season? They would probably think such insects as these to be well worth cultivation, and no one would disagree with them if they did. To be put against this amazing productiveness is, however, the fact that these bees, especially the large cliff-bee, are exceptionally fierce. They are tigers of their kind. Man himself is not safe from them, and beasts perish under their stings without a chance. Combined with the dreadful potency of the venom is a liability to provocation to which only a parallel can be found among beasts of prey when on guard over their young. For these swarms will attack a passer-by if he even makes any unusual noise. A gun fired off in their vicinity sets the whole cliff buzzing, and the bees—though hornets would almost seem to be a better name for them—if they catch sight of any moving object, whether man or beast, while thus irritated, throw themselves upon it with a malignity that is always terrifying, and an effect that is often fatal. Animals have has a rule no hope of escape, for in their panic they attempt to escape by headlong flight, a useless endeavour when pursued by insects so swift of wing. But human beings, either by lying down and feigning to be inanimate, or else by rushing into the nearest water and defending the head till sundown, make their escape, though not always, as the memorial cross on the banks of the Nerbudda, at the Marble Rock, testifies only too well.

From the above, then, it is evident that India possesses an abundance of bees, and offers also a prodigious market for honey, but that hitherto, owing to local causes, the industry has never been systematically developed. Whether it can ever be, except in purely European hands, is very doubtful, for the native of India has little taste for new enterprises. At present the honey-takers belong only to the lowest castes of the people, chiefly the poor jungle tribes, who literally pick a subsistence under the trees and off the rocks of the wildest parts of the interior of the country; and to enter deliberately upon a system of bee rearing would seem to the conservative Oriental like descending to a lower sphere of work to take the bread from the mouth of inferiors. As it is he only recognises their existence with a lofty indifference, and to compete with them in the bazaars in the vend of honey would present itself to him as an intolerable social degradation. So that to induce the Hindoo to turn to apiculture it would be first of all necessary to persuade him to revolutionise both his apparel and his ideas of caste occupations. But in the hills, where the thrifty mountaineers have no compunction as to the kind of work they will do so long as it helps them to make both ends meet, the experiment could be made under far more favourable circumstances; while the numerous mission stations—where the profession of Christianity levels all distictions of caste, and requires a more liberal distribution of clothing over the body—would seem to afford excellent nuclei for bee-cultivation. In the meantime, however, an exceptional market would seem to be fairly open to the European producer. Not only has everyone in the country a sweet tooth, but offerings, if made in honey, are specially acceptable to the divinities.

[We shall be very glad to receive from Mr J. Newland the information he speaks about regarding the dissected queens. From the fact that our correspondent was a personal friend and co-worker in bee-keeping with the late Mr Woodbury we have no doubt that he could give the readers of the Journal some interesting and useful information in connection with bees.—Ed.]

BEE-KEEPING IN VICTORIA.

Sir,—I have received the October number, and am very much pleased with the Journal—the more I see of it the better I like it. I am a subscriber to the *British Bee Journal*, but I find yours is better adapted to this part of the world. There must be a wonderful difference between New Zealand and Victoria with regard to honey resources; we cannot afford to make or purchase frame hives, honey extractors, comb foundation, and other appliances all at once, it will not pay. It very often happens here that for two or three seasons running we have no honey at all, and have to resort to feeding the bees; then comes a season like the last,

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when honey is so abundant that it can be bought at 3d per lb.

I have a small garden in the centre of the town about 35ft x 60ft; in this I have, besides shrubs and vegetables, eleven hives of ordinary bees, nine are common boxes and two are frame hives. The latter are made according to my own views with regard to size for suiting this climate best; the frames are 8in by 10in in the clear. The old hives I have I shall not throw away, but fit them up with frames as I need them, for, as I shall never be able to supply the London market with honey, I think I need not trouble about sectional supers at present. If New Zealand was not so far off as it appears to be by the time it takes to receive an answer to a letter, I believe I would not make any more hives, but send to Bagnall Bros. for some at once. Do you think I have too many black bees in my small place to keep Italians as well, or must I get rid of the blacks first?

H. Naveau.

Hamilton, Victoria, Oct., 1883.

[We believe if you used all the modern bee appliances such as you mention you would find your bees would pay; it is just the use of these that make the difference between paying and non-paying. We can quite understand the state of bee-keeping in any place where honey can be bought at 3d per lb. You *must* adopt modern improvements and be up with the times in bee-culture before you can reasonably expect to get top prices for your honey. Probably 3d per lb. was quite as much as it was worth. We have found consumers more ready to pay three and four times that amount for a really good article, and this can only be obtained by the use of improved apiarian appliances.

With regard to keeping Italian bees, the number of blacks you have will not make any difference, providing you have sufficient room to keep your hives a few feet apart, and there is enough pasturage in the district for your bees. We presume you would Italianize all your black colonies as soon as possible.—Ed.]

BEE GLOVES.

Sir,—Having noticed your article on the above on page 52, November number, I will give you a description of those I wear. I use an ordinary pair of strong cotton gloves, having a pair of worsted-knitted stocking legs sewn on them for gauntlets. Over the cotton gloves a pair of good calf-skin gloves, a size larger, having nearly an inch cut off the tips of each finger and thumb, and where they open inside the wrist to button stitch in a piece of wash leather, to act as a tongue in a boot. These are what I have used since my arrival in New Zealand, and we thought the stocking-legs was a happy thought of our own; it seems not, although we never heard of it before to-day. Wetting the gloves is also quite new to me, but I think very good, in a solution of soda especially. With worsted-knitted gloves over cotton I have found them sting through, they find out the thin part of the knitting; but cotton over knitted woollen is more safe. It really means this: if you cover the hand with anything of which the thinnest place is thicker than the length of the bees' sting, then you are safe—and consciousness of safety adds so much to the calm and proper manipulation of bees.

An Old Bee Keeper.

Ngaroto, Nov., 1883.

REMEDY FOR BEE STINGS.

A strong solution of carbonate of soda is a first-class remedy for bee stings, mosquitoe bites, scalds, burns, &c. A supply of this should always be kept handy in a small bottle well corked. To apply, moisten the parts affected two or three times. An Old Bee Keeper.

Ngaroto, Nov., 1883.

FROM KARL BROS'. APIARY.

Sir,—On page 43, October number, Mr Stevenson asks what we did with our comb honey raised last season.

We extracted all our white clover honey, which we can do freely, but when the flax honey came in we found that it was impossible to extract it, so we put on extra stories with two-thirds of our frames containing full sheets of foundation and one-third with starters only, as we had run short of comb foundation. After all the combs had been worked out, filled with honey and sealed, we took them off the hives. A portion of the comb built on the artificial foundation we broke up and strained; all containing pollen we saved for spring feeding. That built in the frames containing starters we kept for home use.

We went into winter quarters with 120 colonies, and got them all through successfully; they are now all very strong. We have a good many nuclei for queen rearing. The bees have been doing splendidly for the last two weeks in the bush. They are bringing in pollen wholesale from the kahikatea and bukatea, which are now in blossom. The white clover is beginning to flower pretty well here, and in two or three weeks our busy time will commence again.

We have just fitted up four tanks in our honey-room for ripening the honey in; they are made of corrugated iron, five feet high and two feet six inches in diameter. We intend to have them on blocks or stands high enough to run the honey into barrels after it is ripened. We think the tanks will be much better than barrels to ripen the honey in, as barrels are apt to leak after they have been standing in a warm room for some time.

Our honey house is painted black both on the roof and sides, to absorb the heat; the temperature last season inside went up to 98degs.; we think that should be hot enough to ripen honey.

Ohaupo, Oct. 24th, 1883. Karl Bros'. Apiary.

Later.—Since I wrote you last we have had a deal of bad weather here; the bees were doing better three or four weeks ago than they are at the present time. I have been obliged to feed, and have used three bags of sugar during the last three days. There is lots of white clover in blossom just now, but no honey is secreted in the flowers, owing to the temperature being so low and so little sunshine. The honey season was rather late in commencing last year, but it is still later this. However, I am in hopes of our having a good season yet.

November, 1883. J. Karl.

[Your apiary must be situated in a specially favourable locality, as at the time you state your bees were

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carrying in pollen and white clover flowering pretty well, we were having very severe weather, and scarcely a clover flower to be seen, although we have thousands of acres of clover round us.

We presume your honey tanks are made of galvanized iron; if so, will not this be hurtful to the honey unless waxed?—Ed.]

GISBORNE.

The weather here continues very cold and wet, with high winds; as bad weather for bees as could possibly be. Honey comes in very slowly, and some of my hives had dwindled so much that I have doubled up to 70 to begin the season with. I don't know if it is the right thing to do, but I have taken frames of brood from all the strong hives, and distributed them among the rest. This will retard swarming, and equalise the strength of the hives. Clover should begin to bloom very soon, when it is to be hoped things will take a turn for the better. G.S.

Waerangahiki, Gisborne, Oct., 1883.

MR. WILKIN'S REPORT FOR 1883.

I present to you, at his request, the compliments and report of Mr R. Wilkin, San Buena, Ventura, Cal., with whom I was working through the month of June.

The season of 1883 has been, with us, a peculiar one. Early rains in the fall of '82 raised the hopes of farmers and bee-keepers. A great deficiency of rainfall during the winter nearly destroyed them. The last week in March found the ground dry, the crops suffering, and the people fully expecting a dry year. A good rain about the last of March and the first of April, with showers in April, and the rare event of heavy rain in May, again changed the outlook; bees began to prosper, increase, and store. This state of things continued till the latter part of June, when unusually hot weather suddenly put a check upon proceedings. While bees can easily gather winter stores after this little surplus will be taken from them.

Mr Wilkin has 1000 colonies of bees, present count, in two apiaries. He has 720 colonies at his Sespe Apiary, where he started with something less than 500 in the spring, and where there are upward of 2000 colonies within two miles of one point. He has 280 at his Matilija Apiary, where he started in the spring with about 190, and where fewer bees are kept. From the former apiary he extracted 15 tons of honey, and from the latter 9 tons. If room would permit, I would gladly enter at length into a description of the systematic arrangements at the Sespe Apiary; I will only say that everything works smoothly and perfectly. Mr Wilkin uses an eight-frame extractor, *i.e.*, one that empties eight frames at once. One person can run it easily, and I think it demonstrates the fact that time can be saved by emptying a larger number of frames than two or four. Mr Wilkin both devised and constructed it.

Of course, in so large an apiary, various anomalies will occur, such as bees swarming with a virgin queen when they have an old clipped queen in the hive; bees swarming when they have only a caged queen (just introduced) in the hive, and finally returning, &c. But are we not disposed to make too much of these occasional circumstances, and state them in a way that would make a beginner think them liable at any time to happen? For instance, instead of every man who has ever known a swarm to leave without clustering acquainting us with the fact (and we have heard from many already), suppose that those who have known one per cent. of all the swarms they ever saw to thus depart report to us, and we will see if the number does not decrease materially. I have known swarms to apparently leave without clustering, and then have found them clustered, after all, a long way from the apiary. While admitting that they sometimes go directly to the tree, I think that merely seeing them depart is not conclusive evidence.

I will add, that results at Mr Wilkin's apiaries may be taken as a fair average for Ventura County, a few apiaries having done much better and others not so well, according to location.

A. Norton.

—*Gleanings*, Gonzales, Cal., July 10, 1883.

[We are very glad to hear of our old friend Mr Wilkin getting a good crop of honey once again. The past three seasons in California have been very poor ones, but those who have stuck to the business will now be repaid for their perseverence.—Ed.]

QUERIES AND REPLIES.

We shall from time to time give replies through this department to questions pertaining to bee-culture, propounded by our subscribers. We would ask our correspondents to be as concise as possible, and to number their questions 1, 2, 3, and so on.

Query.—*Size of Langstroth Hive.*—In looking over the *Bee Manual*, published some time ago, I see (chap. v.) that for making the Langstroth hive the following dimensions are given:—Length, 20¼ inches; width, 16 inches; and depth, 10 inches. "The upper edge of the outside of both ends and sides should be rabbetted ⅜in. on by 5-16in. deep. The inside bottom edge of both ends and sides ⅜in. on by ⅜in. deep to allow each box to fit on top of any other." Would you kindly inform me if there is no mistake in the above measurement, as I have found it impossible to make them fit. After cutting the timber to measurements specified, I find the outside measurement of top of boxes to be 19⅜in. by 15⅜in., the inside of bottom of hive 19in. by 14¾in. Of course, by the above I mean the rabbetted parts that should allow for one box to fit in the other, consequently I have been rabbeting the bottom edges ⅜in. on by ¾in. deep, as I find that they fit pretty correct that way. By answering the above you will greatly oblige me, as I have not had the opportunity of seeing any "Langstroth hives," the bees in this district being generally left to take care of themselves.—An Inquirer. Hokianga, October, 1883.

Reply.—There is certainly a mistake in your measurements somewhere; those given in the *Manual* are correct. If you had followed out its instructions, the measurements would have been 19½in. x 15¼in. both top and bottom inside of rabbets, instead of those you give. Although we have taken pains to make everything as plain as possible in the *Manual*, we would strongly advise beginners who wish to make their own hives to obtain one made up from the manufacturers as a pattern to make them by. Probably the time saved in having a pattern to work from

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would more than re-pay the cost of it two or three times over.

QUERY.—*Hive Cramp.*—In your last issue, under the heading of "Appliances for the Apiary Workshop," you say:—"To steady the jaw when screwing up, a short piece of inch board is nailed on the bottom which slides between fillets nailed between the horizontal pieces; this forms the cramp." Would you kindly explain this a little better; the jaw you say is only 16 inches long, so it must rest on the horizontal pieces; what shape is the inch board that it nailed on to it, to slide between fillets? By answering this question through the columns of your JOURNAL, you would greatly oblige—N. Schumacher, Inglewood, October, 1883.

REPLY.—We omitted to state that there should be a piece of batten 2in. wide by 1in. thick by 4in. long, nailed or screwed to the bottom of the movable jaw. This batten drops between the fillets which are 1in. square, and it is on this that a board 8in. long by 6in. wide by 1in. thick is nailed to run in a groove inside each horizontal piece formed with two fillets on each side. We thank you for directing our attention to this omission.

VISITORS.

Two young gentlemen, Messrs J. L. Shadwell and W. F. Robinson, bee experts, members of the Middlesex Bee-keepers' Association, lately arrived from England in the s.s. Ionic, bearing letters of introduction, have just paid us a visit. It is their intention, as soon as a suitable place can be procured, to start bee-farming, for which purpose they have brought with them a number of appliances. As one of their first requirements will be bees to start with, we call the attention of those who have any to dispose of to Messrs Shadwell and Robinson's advertisement in another column. We think the gentlemen are fortunate in choosing the Auckland district for their future operations, and we extend to them a hearty greeting.

CIRCULAR RECEIVED.

WE have received from Mr Thomas B. Blow, of Welwyn, Herts, England,—expert of the British Bee-keepers' Association,—his circular and price-list of bee-keeping appliances. It is a neat pamphlet containing eight pages and cover, enumerating every modern appliance a bee-keeper requires, and is sent free on application. We notice that Mr Blow is the taker of a number of first-class prizes for apiarian implements. His advertisement appears on the cover.

HONEY AND FRUIT TINS.

WE are in receipt from Mr George McCaul, of the Galvanized Iron Works, Thames, a sample each of his 1lb. and 2lbs. honey tins, and 2lbs. and 4lbs. fruit preserve tins. They are all made on the same principal—the centre of the tops being cut out with a die and flanged. The tops are already soldered on, with the exception of the centre pieces, the flange of which fits in a groove. After the tins are filled the centre pieces are put on and the flanges soldered. With the aid of the groove or channel for running the solder in, a novice should be able to make a neat job of the soldering. The tins are well made, and at the very low price they are offered by the gross, should command a large sale. Mr McCaul's prices for the above will be found in his advertisement on the cover.

HONEY MARKETS.

AUCKLAND, December 1st, 1883.

We beg to quote honey as follows:—Wholesale, 1lb tins, 8s to 8s 3d per doz.; retail, 1lb tins, 11s to 12s per dozen. Bulk honey, wholesale, 4d per lb; retail, 5d per lb. Extra fine, 6d per lb.

AUCKLAND AGRICULTURAL AND MERCANTILE CO., Limited.

ENGLAND.

By last mail news, honey was still in good demand at average rates. The value of honey imported into the United Kingdom during the month of August, 1883, amounted to £6,262.

—*British Bee Journal.*

AMERICA.

NEW YORK, October 15, 1883.

HONEY.—White clover and basswood in 1 lb. and 2 lb. sections, 17 @ 21c.; dark to second quality, 14 @ 15c.; extracted white clover, in kegs and barrels, 9 @ 10c.; dark, 8c.

BEESWAX.—Prime yellow, 27 @ 29c.

H. K. & F. B. THURBER & CO.

SAN FRANCISCO.

HONEY.—There is a fair jobbing trade. Offerings are not large. Choice qualities command extreme figures.

	c.	c.
White to extra white comb	16	@ 20
Dark to good	10	@ 13
Extracted, choice to extra white	8	@ 9½
Dark and candied	6½	@ 7½
BEESWAX—Wholesale	27	@ 28

STEARNS & SMITH, 423, Front-street.

—*American Bee Journal.*

SPECIAL NOTICES.

WE have given up all the space we can in this issue to the clearing up of correspondence and matter that has been waiting insertion for some little time.

NOTICE TO BEE-KEEPERS.

Mr H. H. Hayr wishes us to state that he keeps on hand and for sale all kinds of apiarian appliances. We believe he is agent for Messrs Bagnall Bros. and Co.'s bee-keepers requisites. His advertisement appears on the cover.

QUERY AND REPLY DEPARTMENT.—Correspondence for this department should reach the editor not later than the 15th of each month, when replies are required in the next issue.

ADVERTISING DEPARTMENT.—Advertisements for the next issue should reach the publisher by the 24th of each month.

Correspondence for publication may be sent at book post rates *i.e.*, one penny for every two ounces, providing the book post regulations are complied with, and the words "Press Manuscript" are written on outside of cover.

Our Correspondents will oblige by writing articles for publication on one side of the sheet only.

P.O. Orders for Subscriptions, Advertisements, &c., to be made payable to J. C. Firth, Chief P.O., Auckland, and sent under cover to H. H. Hayr, High-street, Auckland, or P.O. Box 186.

SCALE OF CHARGES FOR ADVERTISEMENTS.

Single Column.	£	s	d	Double Column.	£	s	d
Three lines	0	1	6	Page	2	10	0
Per line afterwards ...	0	0	6	Half page... ...	1	7	6
Inch of space	0	3	6	Third of page ...	1	0	0
Quarter column... ...	0	8	0	Quarter page ...	0	17	6
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THE NEW ZEALAND AND AUSTRALIAN

BEE JOURNAL.

Devoted exclusively to Advanced Bee Culture.

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All correspondence intended for publication to be addressed to the Editor, Matamata, Auckland, New Zealand, and business communications to the Publisher, P.O. Box 186, Auckland, New Zealand.

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CALENDAR—JANUARY.

ALTHOUGH there has been a considerable improvement in the weather since the first week of December, still it could not by any means be termed seasonable; the temperature has been a great deal below the average for the first month of summer, and even when not raining the sky has been overcast most of the time. The absence of clear sunshiny days during the past few months has been most remarkable, and now that we have entered into the second month of summer they are the exception and not the rule as in ordinary seasons. The yield of honey from clover and other flowers has been much better during the last three weeks, though very small compared with the same period last year, which is attributable to the scarcity of sunshine, this being the most important factor in causing the development of saccharine matter in flowers and fruit.

With regard to surplus honey, we expect to hear of very little being taken in New Zealand this season, for the unfavourable weather has been general throughout the Colony. Probably in sheltered districts near the sea coasts, where the late frosts were not so severe as to materially interfere with the growth of clover, etc., honey has been more plentiful than inland; but, at any rate, nothing like an ordinary crop will be secured anywhere. With the present outlook and two months and a half of what is usually the best part of the honey season gone, we cannot expect much to be done in the way of storing surplus honey, and we would advise bee-keepers to be very careful and not deprive too close, except they are prepared to feed up for winter. To make sure of having sufficient for winter, it would be better to store enough frames of honey away as would answer the purpose before beginning to deprive, in case the season should suddenly close; unless the English plan is adopted, *i. e.* depriving close and feeding up for winter with sugar syrup. At Matamata there are plenty of white clover blossoms about now, but nothing like the quantity there was last year at this time, still honey is not very plentiful; instead of a fair swarm building out the 10 sheets of foundation in a week or less, it takes the bees nearly or quite three weeks. Judging

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by appearances at present, we do not expect to get more than sufficient honey to make a good winter's supply. We have increased a little by natural swarming, bringing our stock up to 195; we do not intend to let them exceed 200 at most this season.

The instructions already given with regard to securing surplus honey, will apply to this month. Particular attention should be paid to the ripening of honey, if extracted, before it is capped, and also that all section honey is sealed before being removed from the hive. Honey, whether comb or extracted, should never be stored away in a damp place, as it has a great affinity for water, and the result of dampness is fermentation.

The honey-house or room where honey is to be stored should be well ventilated, and have at least two windows or openings, through which a current of air could pass. These should be covered with wire netting, having meshes sufficiently small that a bee could not pass through. If the netting is tacked on to a light frame, and the frame hung on hinges so that it can be opened when required to let out any bees that will occasionally get in, it will be all the better. If a house is built for this purpose, it need not be a very large one, just sufficient to accommodate the tanks required, and allow of the extracting and uncapping being done in it. The roof should be close boarded immediately under the shingles to prevent bees and dust getting in, and a few shelves nailed round on which to stand comb honey in sections. It would be an advantage to have a large sliding door at one end, through which a good-sized cask could be rolled. A house of 20 x 12 would be a good size for an apiary of from 100 to 150 hives.

THE INCREASING DEMAND FOR HONEY IN OUR LOCAL MARKETS.

Two of the principal questions that will naturally arise in the mind of a person who contemplates going into bee-culture extensively, are—first, will there be any difficulty in selling all the honey I raise? and second, where can I expect to find a market for it? In answering the above questions we shall deal simultaneously with both and proceed to show that our local markets offer splendid opportunities for the ready sale of all the honey we can raise.

In 1879, when first introducing the improved system of bee-culture into New Zealand—we believe we can correctly say the Australasian Colonies—and making it known through the local press, many persons spoke and wrote to us in the following strain:—"You say that tons of honey may be raised under the new system by bee-keepers in New Zealand, where comparatively little was produced before; if this is correct, what are we going to do with it when we have raised it, we can never sell such large quantities?" Our answer was: "Do not let that question trouble you, go to work and raise a good article of honey, and you will not require to ask me what you are to do with it when you have some to dispose of; there will always be a ready market for it at a remunerative price." It might be asked, how did we know that? Well, in the first place we had previously some little experience of selling honey, and in the next place we had closely watched the honey markets in those countries where the progress of bee-culture was most rapid, and found that the demand kept ahead of the supply. The knowledge of this made us feel confident that the demand would increase as rapidly in the Australasian Colonies as it had done elsewhere directly the *pure* article was placed upon the market. As examples of the rapid development of supply and demand, we may take the United Kingdom and America. We have no hesitation in saying that for every pound of honey raised in those countries a few years ago, there are thousands produced now, but the demand has more than kept pace with the supply, for it appears to be farther from being satisfied than ever. This, of course, is entirely due to the improved system of raising the honey, which enables the bee-keeper to place before the consumer the pure nectar itself, with its original aromatic flavour untainted, instead of the vile rubbish that formerly was obtained.

As a further proof that there is always a large and growing demand for the pure article, we can take our own experience with regard to local markets. Previous to the season of 1878-79 we had never seen or heard of any honey of local production being placed upon the market at the Thames, save a little brought in by Maoris in buckets and kerosene tins. Although we had for years raised several hundred pounds each season from the few hives we kept for amusement, all we could spare was at once bought by our neighbours, so that we never had occasion at that time to put any on the general market. The demand for and supply of the Maori article was very small indeed, we do not believe it exceeded 150lbs., or at the most 200lbs., a year. Very few bees were kept by the residents, and probably 150lbs. would more than cover the amount raised by them, so that, assuming our figures to be correct, and we are certain we have given the outside ones—with the exception of what was raised by ourselves—there could not have been more than 300 to 350lbs. of locally-produced honey consumed in twelve months, amongst a population of over 5000. Of the imported article we cannot give figures, but believe the sale was very small, limited quantities only being bought for medicinal purposes. In the above season we commenced to increase our bees, went into bee-culture as a business, and raised about three quarters of a ton of honey, which was sold as fast as we could take it, in fact a great deal was bespoke before we had taken it off the hives; at this time we had all the modern appliances in use, which enabled us to put on the market a superior class of honey. In the following seasons there was a considerable increase in the number of bee-keepers who, as well as raising honey for home use, were sending some to market, and in 1882, when we left, as near as we could calculate, the annual consumption at the Thames had risen in about three years from 350lbs. to over three tons, although the number of population had in the meantime decreased considerably; the demand for the local article at this time being greater than ever. What occurred in this market we think may reasonably be taken as a criterion as to what will take place in other local markets under similar circumstances.

There is scarcely any limit to the uses that honey may be put to; when it can be bought in large quantities at about the price of sugar, it will take the place of that article in many manufactures. The manager of a leading brewery has told us more than once that when we could guarantee to supply him with a few tons each season he would be prepared to take it for brewing

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purposes in preference to sugar. If one brewer prefers honey to sugar, we suppose others do; if so, this would open up a market for an enormous supply. Then jam-making, fruit-preserving, and confectionery-making may be reckoned upon as large outlets for surplus honey.

As a still further proof, if it were required, of the increasing demand for honey in our local markets, we may state we have lately had enquiries for large quantities; one firm asks if we can supply ten tons, another would be prepared to take our season's crop on the supposition that it would amount to several tons, besides enquiries for smaller parcels; we believe we could easily place locally from 20 to 30 tons at the present time if we had it. We consider we have now stated sufficient to clear away any doubts existing in the minds of Australasian bee-keepers as to the probability of finding a ready sale for all the honey they can produce, and to convince them that there need not be any fear of a glut in the markets of the pure article.

METEOROLOGICAL OBSERVATIONS.

It has been suggested that the monthly publication of meteorological reports would tend to make the Journal more complete, as these reports could be used for purposes of comparison in the future to show the influence of the weather on the production of honey. As we take the same view of the matter, we shall, in future, publish them. In order to make the first volume complete we have obtained from T. F. Cheeseman, Esq., the reports from July last, which will be found in this issue. We have only given the *means* for the month and the average for previous 16 years, as these will be found to answer all requirements.

CLIMATE AND BEE CULTURE.

BY T. J. M.

(*Concludued.*)

Besides the influence of moderate temperature upon the growth of honey-producing plants, there are other considerations which lead to the conclusion that a certain medium between the extremes, both in the winter and summer seasons, must prove the most favorable to the main object of bee-keeping—the obtaining of surplus honey. In countries with very cold winters, even in the most temperate parts of Germany and Great Britain, the chief difficulty with the apiarist is the wintering of his bees. He cannot expect them to gather food for their own sustenance, much less for storing, and his chief care is to keep them confined to their hives, and if possible in a state of complete torpor for nearly three months of the year; what he most dreads is that they may be tempted by a short spell of bright sunshine to leave their hives, very probably to lose their lives if snow be lying on the ground, or happens to fall while they are out, and in any case to be roused to a condition of unprofitable exertion which can have only one result —the increased consumption of their stores. Probably the most unfavorable position of all is that of a winter season not severe enough to keep the bees entirely confined, but still during which they can gather no food, and are liable to be lost during their flight, owing to falls of snow or heavy cold rains. On the other hand, in tropical climates there is no cessation in the activity of the bee at any season—it continues to gather more or less honey all the year round—but, as might be expected in such a case, there is less tendency to lay up a store of surplus honey for a time of scarcity, and yet it is exactly this natural instinct of the insect which must be skilfully cultivated and taken advantage of by the bee-keeper in order to obtain the best results from its industry. It is easy then to understand the fact alluded to by Mr Fullwood in his interesting paper upon "Apiculture in Queensland," in the October number of the Bee Journal, when he says, "The winters being so mild, breeding and honey gathering seldom ceases. The swarming is more regular, spread over a longer term, but probably will rarely ever be so large as in many other places."

As to very low or very high summer temperature, it may be assumed that in any part of the world where the winter is not too severe to admit of bees being kept at all, there will be a sufficient summer heat to allow of a more or less suitable season for breeding, swarming, and collecting honey. In very warm regions, however, the increased heat of summer is more likely to be conducive to the two former results than to the latter. Here again we can easily follow Mr Fullwood when he tells us in the paper above alluded to, that Queensland is "a grand country for the multiplication of stocks," and goes on to mention a case of one stock increasing to eleven in the same season. From another source I learn that when bees were first introduced into Rio Grande in S. America, a place with a climate very similar to the northern part of Queensland, "two stocks increased in the first year to 28, and of these 23 which were retained in the same place, increased in the second year to 377 swarms." But these are results not at all likely to be compatible with the main object of collecting surplus honey. I have an idea (which I admit is not as yet sufficiently tested by experience) that it may in practice be wiser, even with a view only to production of honey, to encourage *one* swarm from each stock in the season, rather than endeavour to keep down swarming altogether. If the stock has got through the winter strong enough to give off a *good* swarm (say six or seven pounds weight) very early in the season, then I think it very likely that such a swarm, which will most probably be led by a good queen, if hived upon comb-frames or comb-foundations, will be able to take advantage of the proper honey season, while the stock left in the mother hive, with a young queen, will probably do the same; but all after-swarms (of probably two or three pounds weight each) only tend to weaken the mother hive, and are of little use (unless two or three of them can be successfully united) in forming a new stock for the same season's work. In the cases alluded to of an increase of stocks, eleven to sixteen-fold in one season, most of the swarms must be of this small class, and although such a state of things may be very valuable for purposes of queen-rearing for instance, it is certainly not desirable with a view to production of honey.

It may also be interesting to enquire whether or not, in certain cases, the latitude of the place, and the consequent length of the summer day, may exert an influence on the natural production of honey and the power of the bee to store. If we compare the climate of Otago in New Zealand with that of Edinburgh in Scotland, we shall find that the mean summer tem-

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perature is the same in both places—58deg.; but in Otago the winter temperature (42deg.) is four degrees higher than that of Edinburgh (38deg.), and is, in fact, equal to that of North Italy. This would lead us at once to assume that Otago is much better suited for bee-keeping, owing to the great mildness of the winter. But, on the other hand, Edinburgh lies ten degrees farther from the equator, and enjoys therefore much longer summer days with the same average temperature. Is this an advantage of any importance? Even Bergen, on the west coast of Norway, in latitude 60deg., has the same summer temperature of 58deg., though with a winter temperature 2deg. lower still than Edinburgh. Now there can be no doubt that a summer in that latitude, where the longest day has about 20 hours of daylight, and so much twilight that there can scarcely be said to be any actual night, must be a very different thing from one at Otago with the same temperature, but with only about 15 hours of daylight, and very little twilight at its longest day. But does it follow that the former is therefore better suited for bee-culture? Hours of daylight and hours of sunshine are two different things; the circumstances of the two places as to cloudiness of sky, moisture, natural vegetation, &c., may be, and no doubt are, very different; but we want to know all the facts of such cases, and how they affect the question proposed.

As to the different sorts of bees, it is clear that the Ligurian, Cyprian, and especially the Holyland races, all come from countries from which have a much milder winter and much hotter summer than the home of the German or black bee. This suggests the question, Can the former be used *with advantage* in countries where the winter temperature is very low, or the latter in others where the summer heat is excessive? It may possibly be found that, for purely climatic reasons, the Holyland bee is best suited to places like Queensland, where there is a tropical heat in summer; the German bee to places with a low winter temperature, such as Otago and the south of Tasmania; and the Cyprian, or Ligurian, bee to intermediate climates. I do not venture to form opinions on those subjects, but merely throw out suggestions which appear to me to be worthy of investigation. The best material for forming a correct judgment on all such points will be *accurately-kept accounts* of the results of apiaries conducted upon the best system, in different climates, and with different races of bees. To point out the practical use of keeping and freely publishing such accurate records has been my chief object in this paper.

There is another observation which strikes me to be worthy of notice in connection with this question of climate. All the principal honey-producing countries in the old world lie within, and the best of them nearly central, in the so-called "northern zone of evergreens," in which flourish the vine, fig, orange, lemon, and olive, as well as the almond and wallnut. Nearly all the Australian colonies, and the greater portion of the New Zealand islands, lie within the corresponding southern zone, and the district of Victoria, and the northern part of the Auckland province, may be taken to represent the centre of that zone. We are apparently only now awakening to the conviction that the profitable cultivation of all those fruits is within our power. This is an occupation which goes very well hand in hand with that of the apiarist; the produce of these classes of fruit trees is the best suited for exportation. The facilities for the transport of such produce from the colonies to England are becoming every day greater. London alone seems to possess an "omnivorous maw" capable of receiving everything of this class we can send; and the supplies of honey and such fruits as I have mentioned coming from this Hemisphere are the more valuable, as arriving during the season when the harvests of the northern countries are no longer upon the market. There is no other territory on this side of the globe to compete with New Zealand and Australia except, in some degree, the Cape Colony of Africa, and a small portion of South America, in which latter, however, the inhabitants are not of such an energetic and enterprising class as to be very dangerous rivals. The field open to our exertions, in turning to account the natural advantages of our best-situated districts in the manner above indicated, would therefore appear to be one of great promise.

SHOWS AND EXHIBITS OF BEE-KEEPING APPLIANCES.

BY L. J. BAGNALL.

The Auckland Agricultural and Pastoral Association has very kindly afforded an opportunity for several years past for showing hives, and other appliances for the apiary. A few persons have taken advantage of this, and although the result has not been altogether satisfactory, still I think good has been done. I should like to see more done in connection with this matter as I feel persuaded that a very creditable show could be made, which would do much to educate the public in the use of modern appliances as well as in the class of honey which can be produced by them. One great objection to bee-keepers availing themselves of the Agricultural Association's Shows in November, is that this is their busiest season. A time when the bee-keeper has no honey, unless it is a year old, to show, and when he does not care to be long away from home on account of his liability to lose swarms during his absence.

I think March would be a good month for bee-keepers to make a display, and as I understand that the Auckland Gardeners' Horticultural Society intend holding a Show during March of next year, it seems to me that it would be a desirable thing for bee-keepers and apiarian supply dealers to join with them, and make such a display of their wares as has never yet been made in this Province or in the Colony. In Great Britain and America, bees and honey have been the great attractions at such Shows, and would be here if proper conveniences were afforded for showing them. The different races of bees could be shown in observatory hives. Honey in all the varieties of style in which it can be got up. The different varieties of hives, extractors, and the numerous other appliances. In addition to these, an exhibition of the art of handling and manipulating bees could be given, which would be interesting and instructive. An American paper, speaking of a Show held in St. Joseph, Mo., says:—"Few things last week brought us so many pleasant and profitable things combined, as the display of honey made at the fair, and the lecture of Mr Newman, of Chicago, on 'Bees and Honey.' The attention given to the subject this year marks a new era: the display attracted very great attention; good prizes were offered and awarded; the bee-keepers

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of the region were encouraged, and a more general interest was aroused in the subject. The lecture was very practical, and contained many hints that are invaluable. But practical as it was, the pleasure of the apiary as well as the profit was told; for Mr Newman is an enthusiast, as, to use his own words, all bee-keepers are." It would afford an opportunity for bee-keepers to meet and make each others acquaintance, and possibly a Bee-Keepers' Association might spring out of it.

Hape Apiary, Thames, Nov. 12, 1883.

[Some short time previous to the receipt of the above we communicated with the Secretary of the Auckland Gardeners' Horticultural Association pointing out the advisability of including in their schedule of exhibits for future Shows, a class devoted to bees and their products, and apiarian implements. In almost every county in the old country bee exhibits in connection with the various Horticultural and Agricultural Shows have become quite an institution; and the "bee tent," in which bee manipulations are carried on by experts, is now one of the principal features at these Shows. We have not the least doubt that if the above and similar Associations were to follow out the plan adopted in Great Britain in this matter, they would find it the means of adding considerably to the attractions and increasing very largely the revenue derivable from their Shows, and at the same time give an impetus to the honey industry.—Ed.]

SOME REQUISITES OF A GOOD HIVE.

BY DUNOON.

Now that scientific bee-keeping is coming to the front as a local industry, and a large number of bee-keepers in Australia and New Zealand are considering the advisability of transferring their bees from the box-hive in the shape of gin-case, soap-box, or other nondescript box to the frame-hive, it is well to keep in mind that a frame-hive, whether it be a Langstroth or any other of the numerous varieties of it, may be well made, or indifferently made, or even very badly made; and this will apply not only to the hives made altogether by the bee-keeper from plain timber as it comes from the saw, but to hives bought ready made-up or in the flat. The readers of the Journal will thus see that, in order that they may be able to say that they have a good hive, they ought to know a little as to what constitutes a well made hive, no matter what variety of frame hive it may be.

It ought to be almost unnecessary to say that the first requisite of a good hive is that the timber from which it is made be thoroughly well seasoned and free from warping; carelessness regarding this point will lead to continual trouble and annoyance. The next requisite is that every part of the hive should be so accurately cut as regards the length, breadth and thickness that it shall be the exact counterpart of the same piece in all the other hives in the apiary, and be, if necessary, interchangeable with it. Notwithstanding that this is a point which is more or less clearly laid down in all "Bee Manuals," the average bee-keeper appears to think that any variation less than a quarter of an inch is not very bad, and if it is not more than an eighth of an inch it is first-class. In America, where scientific bee-culture has been most highly developed, careful hive-makers are of opinion that all measurements ought to be correct to the one-thirty-second of an inch. The relation between the top bars of the frames and the frame rabbets should be such that, whilst every frame should be *easily* moveable from side to side, there should be but the very least capability of movement from end to end, merely sufficient to allow of the frame being easily lifted up or down without catching when held exactly perpendicular to the hive. The rabbets formed for connecting the brood-box, the surplus-box, and the cover be exactly the same width, so that they rest upon each other on the inside surface of the hive as well as the outside, and the depth of these rabbets should be such that, whilst they can be easily placed on or taken off each other without jolting or jarring the bees, there shall not be any unnecessary freedom of movement as this would involve the existence of an open space between the rabbets of the two portions in position; this requisite, the careful cutting of these junction-rabbets, as they may be termed, is one requiring the utmost attention of bee-keepers. I have seen them cut in such a manner (and that, too, by bee-keepers who professed to know all about bee hives) that they appeared to have been purposely designed to afford to the bee-moth larvæ, and other enemies of the bees, a perfectly safe harbour of refuge when pursued by the legitimate occupiers of the hive, inasmuch as whilst there was not the slightest hindrance to the pursued entering the harbour, it was an utter impossibility for any bee to follow; and this is in direct opposition to one of the most important requirements of a good hive, viz., every part of the hive open to an enemy of the bee should be equally open to the bee.

All hives which do not possess the above requisites should be at once condemned and rejected, as they can never be really good hives without an immense amount of labour from the bee-keeper, frequently more than the whole hive is worth, seeing that the defects may cause the complete loss of the bees contained in the hive.

The bee-keeper, having secured a good hive, should see carefully to its being well put together and then well kept; an occasional or a periodical coat of paint is cheaper than a new hive.

4th November, 1883.

MEMS. BY AN OLD BEE-KEEPER.

In 1849 my health was so broken down that my medical adviser said: "You must give up business, or you will soon want a wooden surtout;" and at the age of 33 I was compelled to leave my native home, Manchester, and an active life, for a quiet one. In 1851 I bought my first stock of bees, in a common straw hive, from a Mr Ancell, who, at that time, drove the mail from the General Post-office, Le Grand, to Barnett, north of London. Being little from home I devoted much time to my bees, and found that bee-keeping, and the study of their habits, etc., was a most fascinating pursuit, and from that time to the present, whenever practicable, I have always had some few hives of bees. I soon got from the common straw hive to Payne's straw hive, and from that to Taylor's bar hive, with slides between the bars. These slides were a great trouble, as the

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bees cemented them so effectually to the bar that many of the slides would break before they would slide out. I had to remove some sixty miles; my bees were sold. When settled in my new house I bought a stock in a straw hive. During my residence there we had a hen under a coop with some chickens, about a dozen yards away from the bees; one day, hearing the fowl screaming lustily, we ran into the garden to find the hen out of the coop and rushing wildly about with some hundreds of bees flying after her, and looking like the tail of a comet. After some trouble I got hold of the hen, and it appears the bees' enmity was directed solely against the poor fowl, as none of us got a sting in running after and trying to catch her; we took her in doors, and must have taken out nearly a hundred stings from her head; strange to say she recovered.

My disease, a tumor in the neck, required another operation under chloroform, and again I was advised to remove, this time to Jersey, where we lived some years. During my residence there I spent a great deal of my time sea-fishing, and where, in a most unexpected way, I got cured of my expensive and troublesome companion, the tumor. For four or five years of my residence in Jersey I had several stocks of bees, which were placed on a bank some six feet above a garden walk. One day an English farmer called to have a view from my garden, as from it we could discern with a glass any object moving on the near coast of France, and every vessel that went in and out of the harbour of St. Helier's. As this farmer was about to pass under the bees I said to him, "Take care of them!" "Oh!" he replied, "they never sting m-e-e." The "e" was a prolonged one, and his arms and legs went to work like the arms of a windmill. Unforunately for his confidence in his safety, one had stung him on the tip of his nose, and the next day that nose looked like the nob on an iron pumphandle. I left Jersey in 1860 to reside at Dartmouth, in Devon. Here again I had my bees in a small out-house in the garden; I cut two holes between the bricks for entrances through the walls, lifted up the lower sash of the window and put two half-inch laths under it, leaving a space of five inches in the centre for the bees to enter by a covered way into the hives; this passage was covered with glass, and each hive had a pane of glass in the back, so that I could see every bee go out or in, and something of what was going on inside the hives. I think it was in 1861, Mr Woodbury was advertising the Ligurian bee at five guineas per stock, but he wrote me, "as we consider you half a professor, your price will be £2 2s," so I bought my first stock of Ligurians. They were placed in the centre, with passage under the window, and very pretty the yellow jackets looked. They came in one of his wood bar and frame hives with a sheet of perforated zinc tacked over the bars. I united two of my stocks to make room for the Ligurians, and the next morning I went as usual to pass two or three hours looking at the bees. At the back of the united stock hive was one of the queens, surrounded by about a dozen bees, and, to my astonishment, I saw one of the working bees deliberately sting the queen. It was at that time a fact so little known that I was actually afraid to write to my friend, Woodbury, and state what I had seen for fear he would not believe me, and it was not until some months after, we were talking together, when he said: "I have had proofs from several persons that they have seen the bees sting the queen bee," and then for the first time I related what I had seen. At the end of '61, or spring of '62, I engaged for the literary institute Mr T. Fox, of Kingsbridge, to give a lecture on bees, and I sent to the hall a bar and frame hive and supers, and various appliances then in use by good apiarists. In the course of his lecture, Mr Fox described the various straw hives, including Mr Golding's straw bar hive, also a square wood telescopic hive, his own invention, and with which he had been very successful in practise. To my astonishment he spoke against the bar and frame hives. When the lecture was over many questions were asked by the audience; one was "How far will bees fly in search of food?" this I had to reply to for him. The answer was: A gentleman walking out in a lonely district observed bees at work in a field of turnips in flower; it struck him as very singular, and after thinking over the subject, he called upon the only person that he knew who kept bees, and he lived nearly four miles distant from the turnip field, and taking with him two common tin-pepper dredgers, one containing a pink powder, and the other a blue powder, it was arranged that precisely at a certain time the owner of the bees was to dust the outgoing bees with the pink powder, and the gentleman to dust those he saw with the blue powder. This was done, and within twenty minutes of the time agreed upon the blue-powdered bees returned to the hive, and the pink ones made their appearance amongst the turnips; thus proving that bees will travel from three to four miles for food.

Ngaroto, Nov., 1883.

(To be continued).

PRODUCE REGISTER.

This form, if adopted, should be printed folio size, with 60 to 80 blue-ruled lines for dates (as there will probably be nearly that number of extracting days at a large apiary with 100 hives or more), so that the work of the whole season may, if possible, be shown on one sheet, and so save necessity of carrying forward the totals, and continuing on another sheet, as far as the 25 hives are concerned.

I think it better to limit each folio to, say, 25 hives, as in this example, than to extend the length of the paper and tire the eye by following up a large number of columns. An apiary with more than 25 would, of course, require two folios—one of more than 50; three, 75; four, and so on; four for each 100 hives. About 25 folios bound together would be a convenient size—would serve a large apiary of 300 hives for two seasons, and one of 100 hives for five or six.

The same form will, of course, answer for the register of "comb" honey produced.

T.J.M.

Not one swarm in a hundred will go direct from the old hive to the woods if led by a prolific queen, but will settle near by, before taking their farewell leave of the old home.

The mother queen leads the first swarm of the season, and the second as well as the third swarms, are led off by the young virgin queens.

Should any numbers of the Journal be lost in the mails, by notifying us promptly before the edition is exhausted other copies will be sent.

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PRODUCE REGISTER.

Apiary. Hives No.——to——

Honey. Season 18——18——

Date.	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10	No. 11	No. 12	No. 13	No. 14	No. 15	No. 16	No. 17	No. 18	No. 19	No. 20	No. 21	No. 22	No. 23	No. 24	No. 25	Total of 25 Hives. No——to——
1882																										lbs.
Nov. 13	..	..	..	..	..	..	..	..	..	5	..	8	8	..	..	..	..	..	..	..	..	..	..	..	..	13
„ 20	..	..	..	6	..	..	..	..	..	..	..	16	..	..	2	..	..	..	..	2	..	..	..	..	..	26
„ 22	5	5	..	..	..	..	..	..	..	..	..	8	4	..	..	..	..	..	..	..	..	..	..	..	..	22
„ 30	..	29	4	..	..	..	4	..	..	..	..	18	14	..	..	..	8	..	..	..	..	..	..	..	..	77
Dec. 2	14	..	..	6	3	5	5	..	28	4	..	..	..	..	..	..	..	..	14	..	..	..	..	..	..	79
„ 11	..	16	4	2	..	..	..	..	6	6	12	7	..	4	7	8	4	..	..	18	12	..	..	..	..	106
„ 13	5	..	..	..	..	..	..	..	..	..	..	14	8	..	4	8	..	4	..	..	12	..	..	..	..	55
„ 18	..	6	8	..	19	2	14	..	20	..	6	13	..	..	7	.	..	..	8	11	10	..	..	..	..	124
„ 28	..	12	9	9	..	..	..	5	..	..	..	15	12	19	..	8	..	..	8	..	17	..	..	..	..	122
„ 30	..	24	..	..	..	..	..	..	8	..	..	..	..	..	..	..	..	..	..	..	..	13	..	..	..	45
	24	92	25	23	22	7	23	5	62	15	18	99	46	23	20	24	12	4	30	31	51	13	..	..	..	669
1883																										
Jan. 3	..	..	20	..	..	..	..	..	..	..	10	12	12	..	10	..	15	10	..	..	..	5	..	..	..	94

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(*For the N. Z. and A. Bee Journal.*)

All correspondence must bear the name and address of the writer, not necessarily for publication, but as a guarantee of good faith.

THE STANDARD FRAME.

SIR,—Your correspondent from Christchurch, in his letter which appears in your last number, objects to the Langstroth frame as being too long, "more particularly when the frames are hung across the hive (parallel to the entrance);" and adds that "this method of hanging the frames is the most approved in England at present." Now this raises a question of principle in the construction of the hive, which certainly ought to be settled before the minor details of the length or breadth of the frame. The two different methods of hanging the frames, cross or longitudinal, are based on principles affecting the ventilation of the hive. The Germans term the former the "warm" system, because it checks the draft of air coming in from the entrance, the first frame serving as a sort of curtain to shield the succeeding ones which contain the brood nest, and the latter the cold system, because it tends to divide the draft, and to make it rise more directly through the spaces between the frames. The Germans generally adopt the former as better suited to their cold winter temperature, and the British B.K. Association has, no doubt, been guided by similar considerations. This is just one of the instances which show how necessary it is for the apiarist to have a due regard to the peculiarities of climate. It may possibly suit the winter climate of Canterbury or Otago better to adopt the British than the American standard hive; but in Auckland and in the Australian colonies, where the mean winter temperature is up to or above 50deg. as in California, there can be no difficulty whatever about wintering bees in the Langstroth hive, and for the summer season the better ventilation of the latter is a great advantage, exciting the bees to work storing honey and diminishing the tendency to swarm. We have both sorts in use at this apiary, as at first starting my son made four or five hives himself on the German and English principle before we had experience of that of the Langstroth. These hives have cross-frames of something near the size mentioned by Mr Bailey; we use them still because the hives are complete and serviceable, but we should never think of making more of the same sort for this locality now that we know the greater convenience of the Langstroth frame for all purposes of manipulation and extracting. We, on the contrary, would unhesitatingly give our vote for the latter as the standard for this district.

T. J. M.

Bay View Apiary, Dec., 1883.

[We are very glad to see that the question of a "Standard Frame" is being discussed; it shows that some interest is being taken in—what we consider—a very important matter to bee-keepers in this part of the world. It is to be hoped that the subject will now be fully ventilated, and the merits and demerits of the different frames brought to the front, in order that we may learn without loss of time which will be the best one to adopt as a "Standard."—ED.]

BEE-KEEPING IN VICTORIA.

HAVING received an invitation from the editor of the N. Z. & A. BEE JOURNAL to give monthly reports of bee-keeping in this part of the Australian Colonies, and to contribute any other information on bees that may be of service to the readers of the JOURNAL, I avail myself of the opportunity to do so.

My main point in managing bees is to get the greatest result possible from them in order to make the most money out of their produce. For the last three years I have lived entirely on what I have made from my own bees and the fees received for managing other people's. I am what may be termed a professional bee-master; travelling round the country each season in a horse and cart with honey machines, sieves, and tubs; depriving, supering, and nadiring for different bee-keepers; and, if disposed to sell, buying their honey, honey-comb, and bees-wax. My charges are as follow:—For depriving and straining the honey, per hive, 2s 6d; putting on a super or nadiring, 2s; taking off a super or nadir, 1s; the latter is usually less trouble, and therefore can be done cheaper. I have often, with the assistance of a boy, deprived eight hives and strained perhaps four cwt. of honey in a day; but this was hard work I can assure you, and made me feel very tired at night. I generally saved the brood when depriving, but removed the combs as soon as all the bees had hatched, which would be in 21 days, thus forcing them to build new combs. No night-work with bees for me, all day-work is my practice during the honey harvest, as the bees and myself can then see what we are doing.

Our good seasons for honey here are every other year, caused principally by our red gum trees blossoming every second season; there are also other trees which do the same, although I cannot name them. My experience here with bees extends over a large part of Victoria, travelling through the different districts buying and selling honey, wax, and bees, moving sometimes from 10 to 20 hives at a time a distance of 120 miles overland, which is no slight undertaking. In my travels I have seen thousands of hives kept by different bee-keepers, and have had good opportunities of judging the nature of the flora of the various districts, which is what every bee-keeper should study, for the difference of a very few miles will often make your apiary a success or a failure, other things being equal.

By a want of unity among bee-keepers, honey does not realize much in this Colony; as far as I can learn I am the only bee-keeper who sticks out for price, knowing that the advance of one penny per lb. means over £9 per ton. Long before our bee season returns I am always clean sold out at my own price; this proves beyond a doubt that it is only a want of unity amongst bee-keepers that keeps the price so low. My purchasing price, wholesale, is 4d per lb.; selling price, ditto, 6d per lb.; retail, per dozen lbs., 7s; single pound, 8d. Comb honey for Ballarat and up-country districts, 1s per lb.; over 20lbs., 10d per lb.; by the box to shops, 9d per lb., thus allowing them 25 per cent., which I consider fair between myself and dealers.

I have no doubt about getting subscribers to your

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JOURNAL amongst the bee-keepers of my acquaintance, and I intend to write monthly, as it will advance my own interests and do good to others. With good wishes for the success of the N. Z. & A. BEE JOURNAL, I am, &c.,

ZIBER SUMNER.
Bee Farmer.

Great Western Victoria, Nov., 1883.

BOX FOR HIVING SWARMS.

SIR,—I use a box 10 x 11in. and 9in. deep, inside measure. For this box I use a lid 12 x 13in., with a rib 1in. wide nailed two inches from the end on one side only; all of ½in. stuff. If the swarm is on a branch where I can shake it off I hold the open side of the box up under the bees, give the branch a sudden shake, and a slight quiver after if needed; slip my hand between the ribs, turn the box over, and in a few minutes the bees are clustered in the box. The hive, of course, is ready in its place, and as soon as the bees are quiet I take them to the hive, put the box down gently, fold back the mat after removing the cover, then, with a hand at each end, lift up the box containing the swarm, leaving the lid on the ground, and suddenly shake out the bees on to the frames. The box is then put down, the mat drawn quickly but gently over the bees, the cover put on the hive cautiously so as not to crush any bees, and in a short time the bees will be at work in their new home. My swarms are generally hived in half an hour from their coming out. If my bees are in a difficult place I turn the lid with the ribs upwards, and put the box on them; this leaves a space all round for the bees to go in. Last season a lot of my swarms settled in a hedge, and I had to go into the ditch, put the box on the ribs of the lid, and hold it up against the bank while I brushed and shook the bees in as well as I could; all were hived. I use a goose wing for a brush.

J. NEWLAND.

Ngarota, Nov., 1883.

SWARMING BOX, HONEY MARKET, AND OTHER ITEMS.

SIR,—Thanks for your reply to my communication to you of some five weeks ago, and also for your enclosure of spider plant seeds, both of which were unexpected. Again I have to report my inability to obtain quotations for honey in this market; in fact, I know of no place where I could lay my hands on any, with the exception of one firm, who are retailing 2lb tins of Cal. w. sage honey at 2s. per tin. This, I think, will be their own importation. By the by, are you a ready market for clean wax—I see you advertise for same. What could you give, landed in Auckland, for quality, say same as that in your foundation?

Bee-keeping in this part of Otago is hardly worthy the name as yet, it takes those who have bees all their time to keep them, let alone make profit out of them. Of course, this is due in a great measure to the very primitive way they will persist in hiving them. Persist, I say, because the public in these parts have, from time to time, had their attention drawn to the advantage of the bar, or rather frame hive. Farmers and rural folks are very slow to take up new ideas, and of these I think the Scotch are the slowest.

My friend, Mr Brickell, some three or four miles from me, a very ingenious sort of fellow, is very enthusiastic in the bee line, and intends, I believe, to go into the business thoroughly, already having completed several orders for Langstroth hives, concerning the adoption of which I may say we both agree. I think the additional freedom with which you can sell them if you want to is sufficient reason to settle on that frame. I have refused to buy several different sorts of frame hives because they were not interchangeable with the simplicity. Of course, this is the experience of many.

Before you receive this you will no doubt have had a communication from Mr Brickell, and as far as I can judge, I believe him to be a decent pushing fellow, who will, no doubt, help *modern* bee-keeping in these parts even in his small way (he, like myself, being only a working man). But oh! it is such a job to stir up these stick-in-the-muds. And then we have such a climate down here; why, whilst I am writing, the blast is howling round the house and the rain is pouring down in torrents, as in the depth of winter, and such has been the weather this last 4 or 5 weeks, the bees just getting out for a few hours now and again. I am reduced to one hive, and that I have had to feed a few days ago by filling up three empty frames of comb. You may be inclined to demur to this as feeding too rapidly, but where would they be if this weather continues another week or so, and there is no getting to look at them whilst it lasts.

Friend Brickell is strongly of opinion that *we* must go in for a modified chaff hive, that is to say, he is going to construct the lower story, so that it shall have double walls and contain a casing of chaff all round. This will, no doubt, serve the double purpose of keeping out the extreme cold we often get in the winter, and will greatly modify the action of the sun's rays in summer; of course, this has to be proved. At present we are feeling our way, knowing that there is much to be learnt. What will do in America or England, or anywhere else, may not do here; caution must ever be our watchword. Even what applies to one part of New Zealand may not to another, and I think, of all places, New Zealand demands the greatest amount of caution to be exercised, comprising as it does so many distinct varieties of climate and flora.

The 5lbs. box of comb-foundation that you forwarded to my place of businesss for Mr Brickell, came to hand in good order, and as 2lbs of it is for me, I may say that I am highly pleased with it, and think it is a deal nicer than Roots'—the cells are deeper and clearer—but this may be due to the small quantity, which reduces the pressure of one comb on another and the better packing. I would like to be as sure of getting down a queen or two.

Much has been said about hiving and hiving trays. The simplest way to hive a swarm, I would think (I speak thus because I have hitherto hived into a common box), would be to construct, of ¾in. light wood, a frame some 6 or 8in. deep, the circumference of a simplicity hive, so that you could stand a hive on top and be flush all round; before nailing together, run a groove along the two sides, say ½in. or ⅝in. from the edge, in which to run lid or bottom as you may choose to term it, which, of course, will slide in or out. Now on the other edge tack some calico all round sufficient to pull over, gather in, and tie as you would the mouth of a sack. Being provided with a tray like this you would simply hive your bees as into a common box by using the tray lid downwards. If you

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have a distance to carry them then brush in all the bees you can, tie the calico over the mouth of tray, and take them to their destination. If you invert the tray so that the sliding lid is uppermost, the bees will almost be sure to be clustering to the lid. Unloosing your calico (if you have had to use it through distance), place the tray, lid uppermost, on the bottom board of the hive you intend to put them in; then set your hive on top with a frame of brood and some foundation smeared with honey. All being ready (smoker and all), gently draw the lid of your tray, and the cluster will be very easily broken up; now if you have propped up the tray with a stick or two, some ¾in. from the board, and they should show any disposition to cling to the bottom of the frames, give them a puff or two of smoke, and they will, no doubt, shift up a little higher; but don't smoke them out of the hive. I think this is worth a trial, and is very simple.

In ordering a queen, do you think it would be safer to place her in the hands of someone on board rather than run the risk of the mail bag?

Suppose, by reason of over-production, honey (as with meat), should become almost a glut, do you think the jam makers could use it, and if so, would it be worth weight for weight the same as sugar, say £36 per ton? If so we have no reason to fear but what even at that it would pay. But there's the if. Can anyone definitely answer it? With best wishes that you may have a good harvest.—I am, &c.,

WM. CHAS. BROWN.

Maybank, North East Valley, Dunedin, Nov., 1883.

P.S.—I see, after writing the foregoing, that a correspondent writing in this month's JOURNAL, advocates a similar hiving tray; I had overlooked this. You say they will cling to the bottom of the frames; I think the smoke would drive them up, if not, let them alone until next day. I think the following morning would find them up amongst the frames. I fail to see the need of a brush if the lid is drawn out gently.—W.C.B.

[Our price for clean, bright yellow beeswax, landed in Auckland, is 1s per lb.; we can usually take any quantity. We have sent some comb-foundation to Dunedin on sale, which, no doubt, bee-keepers there will find much more convenient than having to send for it when required. We are sorry to say that all districts throughout New Zealand are suffering from the extraordinary bad weather we have been, and are now, getting; the "oldest inhabitant" cannot remember such a season before. Your swarming-box is similar to "T.J.M.'s" with the exception of the movable lid. It will be better not to use much smoke with a new swarm, as it might cause the bees to leave for "fresh fields," &c. We think there need be little fear of over-stocking the local markets with honey for a long time to come; not but what there will be plenty raised in the course of another year or two, but we feel convinced the demand will more than equal the supply for many years. As a proof of this we could now place 25 tons or more locally if we had it; one firm is prepared to take 10 tons, and another our season's crop, whatever it might be—of course they suppose it would amount to a few tons; we have also several enquiries for smaller parcels. Our honey being pure white clover, we value it at about £40 per ton in bulk. As soon as honey can be procured in large quantities at about the price of sugar, it will enter largely into our manufactures; jam-makers, fruit-preservers, brewers, and confectioners will use it, besides taking the place of sugar in many other ways. The best advice we can give to beginners is to adopt all the modern appliances, raise as much honey as you possibly can, with a sure conviction that you will find a ready market, at a remunerative price, for all you can produce. —ED.]

BEE-KEEPING NORTH OF AUCKLAND.

SIR,—I am a subscriber to the N. Z. & A. BEE JOURNAL, and have read with interest the correspondence and articles published in all the numbers to date; but as I noticed you advocate the Langstroth hive to the exclusion of all others, I have been doubtful whether you would publish a communication from me, giving my experience of the English "Standard" frame-hive. I am very pleased that you have started a bee journal and have often thought that one was needed in the Australian Colonies as a medium through which bee-keepers could exchange their ideas and experiences to the mutual advantage of all; and I have no doubt that in time it will be well supported.

When I commenced bee-keeping three years ago I soon found out that the honey obtained in this locality was too thick to extract without breaking the comb. So I was not much better off than if I had box-hives, and, as I was not prepared to put section boxes on, I had to take the surplus honey and strain it through cheese-cloth. The next year I gave up the idea of extracting, and prepared 1½lbs. section boxes, and top-boxed all hives, using wood and tin separators in 27 hives, and boxed 9 without separators, using nice white comb for starters; only 4 with the separators went in the boxes, and 8 out of 9 without separators worked in the boxes well. The bottoms of my boxes used without separators are ¼in. narrower than sides and top, and to give the bees more room to go up, last year I bored three 1-inch holes in bottom of each box, and I was quite successful in getting an average of 40lbs. of comb honey from each hive (using no separators), which was a fair return considering that this immediate neighbourhood is not rich in clover, our soil is too heavy to grow it, a year or two after it is sown it dies out, and very little bush at a less distance than three miles. Swarming commenced here on the 18th October. I have not time to rear queens, I let them swarm away naturally. We have used a 100lb. flour-bag to take the swarms to the hives and throw them in between the frames hived nearly all this way this year. We use moleskin gloves; they answer very well. What is the cause of bees murdering their queens? We lost six hives last spring through it. I have one of your smokers, which is very useful for uniting small colonies.

JNO. BECROFT.

Port Albert, November, 1883.

[We cannot imagine what could have caused you to be doubtful about our publishing your experience with the English "Standard" frame. We are not aware of having made any statement in our articles on "The Langstroth Hive" or "Standard Frame for Australasia" which could reasonably be said to convey the idea that we would be averse to publishing correspondence relating to any other than the Langstroth hive. On the contrary, we stated in our introductory article in the first number of the JOURNAL that "Our correspondence columns will be open for the discussion of all matters

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that will tend to the advancement of knowledge in bee-culture." With reference to our advocating the use of the Langstroth hive and frame, we consider it our duty as Editor of this JOURNAL to point out to bee-keepers the hive, other appliance, or method in connection with apiculture that we believe to be best; in fact, if we did not do so we think the JOURNAL would be of very little use; at the same time we wish to have the views and experiences of others, no matter how varied, as this will be the only means of arriving at a correct estimate of the value of any particular method or article. In advocating the use of any special appliance we have given our reasons for doing so, and we hope our correspondents will do the same; it is not sufficient to say that this or that method or thing is the best without pointing out plainly its advantages over others. There is no business or occupation at the present time making such rapid strides in the way of improvement as bee-culture; this, without a doubt, is entirely due to the liberal spirit of those engaged in this pursuit, which prompts them to make known through the various journals anything they may have discovered that will benefit their fellow-workers. Therefore, we specially invite Mr Becroft, and others, to give, through the JOURNAL, their experience with any appliance (save box-hives and the sulphur pit) or method in the management of bees they may think best for the purpose. We cannot answer your question *re* bees murdering queens correctly, without some particulars. It is not likely that they were killed by their own bees, but by robbers. If you will state the condition of your colonies which became queenless, and give all the particulars you can, no doubt we shall be able to point out the reason why the queens were killed.—ED.]

CE N'EST QUE LE PREMIER PAS QUI COUTE.

SIR,—Throughout the following winter I diligently studied all the bee literature I could lay hands on—"Cook," the "Am. Bee Journal," "Gleanings," and most interesting of all that ingenious novelette the "Blessed Bees"—finally deciding that I could not do better than copy as closely as possible the methods and appliances of Mr D. A. Jones. I procured a sample hive and frames, and had them accurately copied. Taking advantage of one of my scanty holidays, in my case a veritable *dies alba cretâ notanda*, I went down to Beeton on the 24th of May. The day was bright but cold, and the vegetation showed that characteristic tardiness in coming out which makes a Canadian spring my aversion. I returned the same evening with two Italian swarms and an extractor. Safe at home, the haste I made to release them was only exceeded by the respectful alacrity with which I got out of their way as they poured out after their four hours' close confinement, though they were really very quiet peaceful bees. A stock I got a fortnight later from the Western States were very much the reverse; their first act, the very evening of their release, being the raising a bump, as yet unclassified by phrenologists, on the head of a venerable maiden relative. I believe there's a station somewhere on the Union Pacific which, from the peculiar promptitude its inhabitants displayed in early days in organizing funerals, received the name of "Lively Times," and while transferring the American stock I had serious thoughts of selecting this as the name for the apiary I hoped to have, as I really thought before I got through they would be the death of me. The weather being raw and cold, I carefully stimulated in the evenings with a comb partly filled with warm syrup, and had the satisfaction of seeing my three stocks rapidly increasing, the frames being carefully blanketed. Commencing about the end of June I was able to form nuclei and rear queens. I was fortunate enough on one occasion to open the hive just in time to separate and save two young queens who were clinched in a life and death struggle. Introducing one, I looked the following evening for her in vain; just as I was giving up the search, under the conviction that she had fallen a victim to the "home rule" faction, I heard a pitiful little squeak, and, hastily scanning the frames, I espied my poor queen, followed by a few of the baser sort, whose persecuting attacks caused her to utter the faint sounds I had heard. Sharing the views of Maning's New Zealand chief as to the inutility of "little wars," I poured in such a deluge of smoke and peppermint water that they were glad to beat a hasty retreat. Scenting the queen and daubling her with honey she was speedily accepted, and soon replenished the brood combs. By this time I had been able to regard stings from the point of view held by the philosophical Mr Toots, with reference to things in general, viz., as "of no consequence," and was often called upon to shew the little skill I had acquired to lady visitors, who, safely ensconced in a neighbouring summerhouse, gave utterances not to the *ululationes foculorum* of the classical author, but to the usual inane ejaculations reserved by the sex for everything but dress. Ah! I was a great medicine man in those days. Enough, I have said.

NIU TIRENA.

Hamilton, Dom. of Canada, Oct., 1883.

MAKING A START.

SIR,—I have been very anxious to make a start in bee-keeping, and tried to purchase a swarm from my neighbours, but failed in getting one. A few days ago my boys discovered a swarm in a hollow tree in the bush, about one mile off, which I determined to capture. I first made a hiving case as described by "T.J.M.;" I then considered when is the best time to capture the swarm? thinking many bees would be away gathering honey in the day time which would be lost by an attempt, then decided me to go at night. Arrived at the tree I proceeded to tack the open mouth of the sack round the entrance to the hollow, and then rapped on the trunk for half an hour, thinking the swarm would drive; but none ascended into the box. As there appeared no other plan of getting at the bees I proceeded to cut a large hole into the tree. Unfortunately the tree was very rotten, and crumbled into dust and fell on the dark combs. This prevented my being able to distinguish anything, and I decided to shovel up everything I could and place it in my box, hoping the bees would crawl out of the dirt, and I could then hive them. This I did by shaking them on to a cloth and placing the hive over them, but, to my sorrow, they had all gone at night. On again visiting the tree I found the remaining bees had left the rubbish and clustered on the trunk; I then held the sack of my hiving case under them and swept them in in the usual way. I think,

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Sir, that we may learn a good deal if everyone would relate the errors they make, in order that you may point out the proper way to proceed, and others may avoid the same mistakes. It is with this in view that I relate my first attempt at transferring stock from a tree to a hive. I regret that so many bees of my swarm have been lost and killed, and I hope you will be good enough to explain how I ought to have proceeded.

C. W. Babbage.

Te Koriti, Wanganui, Nov., 1883.

P.S.—In answer to Mr J. Awdry, I may say freight to Wanganui on my hives came to 7s 6d; wharfage, 1s 4d.—C.W.B.

[It is a very difficult matter to give advice on "how to proceed" in a case of this kind unless one saw the tree and the surroundings. The position of the tree, and the bee nest in it, &c., would require to be known before we could give the details of any method that would prove successful in securing the bees. However, as far as we can judge without fuller particulars, we would probably have proceeded in the following manner:—If the bees were within a reasonable distance, so that we could carry them in a light box holding four or five frames, we would make as light a box as possible to hold, say, five frames, making it in such a way that the frames would be perfectly secured from moving except to take them out and put them in, allowing about an inch space between each two frames. The bottom of the box to be nailed on, and a temporary cover, removable, with an entrance for the bees bored in the lower part of the box. Taking the box with frames, some transferring wires, or tape, and a smoker, we would go to the tree during the *daytime*—morning would be best. After getting the smoker underweigh, and blowing a few puffs of smoke into the bee nest, we would proceed to enlarge the opening to it, so that we could get at the combs conveniently. These we would cut out, transferring the best of them, and that containing brood to the frames, in the meantime driving the bees out of our way with the smoker. When the best of the combs had been secured in the frames, and the box placed close to the nest, we would—if we could not get the bees out of the old nest in any other way—put in our hand and gently lift them out and put them in the box until we were pretty sure the queen was secured, which would be known by bees fanning at the entrance, and those flying about entering the box. After we were certain the bees were taking to the box, which would be known in a very short time, we would leave them till evening, or, if there was no fear of the box being disturbed, we would leave it for a day or two to give the bees time to fasten the combs when it could be removed some evening after the bees were all in. The entrance could be secured by tacking a piece of wire cloth or perforated zinc over it, and the cover either screwed or tied down so that no bee could escape; a cloth of some kind might also be tied round the box, and in this way it could be carried as most convenient and placed alongside the hive to which the frames are to be transferred to. We have supposed the tree to be lying on the ground.—Ed.]

Take care of the back numbers of the Journal, they will be very useful for future reference. Any of them can be supplied at sixpence per copy.

FROM OUR CONTEMPORARIES.

EXTRACTING AND CURING HONEY.

Read before the N.E.B.K.A. by L. C. Root.

During the past thirteen years we have extracted honey largely each season, taking as much as sixteen tons in a single season.

We have operated under almost every variety of conditions.

During this time we have noticed the many inquiries, which have been made through our journals, bearing upon the subject of extracting honey. It is a growing interest, second to none in our pursuit.

One of the most important points in this connection is, when is the best time to extract? Indeed, to those who extract largely, it is a question all important.

Let us notice some of the advantages of the different methods.

We shall claim, first, that as regards the quality of honey, there is no difference as to the time when it is extracted. It may be cured equally well after as before. The only necessity is that it be cured.

The advantages of extracting honey as soon as it is gathered are these: When it is being gathered rapidly, if it is extracted at once, room is afforded for the queen to deposit her eggs, and the operation seems to stimulate brooding. The large force of bees thus secured is of great importance in sections where the seasons are long, or where fall honey is abundant.

When extracted as soon as gathered, the bees are saved the labour of curing the honey and of capping the cells, and the operator is saved the labour of uncapping the cells, but the great advantage in removing it from the combs as fast as filled is, that the bees may be fully occupied in bringing in honey while the yield continues. To us who are in sections where the flow of honey is of limited duration this is of extreme importance.

When the honey is first gathered, it is much more easily thrown from the combs, and it is much more agreeable to operate when the bees are busily at work.

The best method of curing honey has been of much interest to us, and we have experimented largely in this direction.

When honey is being gathered so rapidly that each good stock is storing from twelve to twenty pounds per day, one will not realize, without close observation, the amount of labour it is for the bees to cure the honey and the consequent loss. Actual experiments will prove this to be very much greater than would generally be supposed.

In all this process I see only the fact that the honey is spread over a large surface, and handled over by the bees and subjected to a high degree of temperature and more or less exposure to a circulation of air. With these facts in mind, we have endeavored to produce the same results and relieve the bees of this labor.

We have arranged an evaporator by which the proper degree of temperature is easily maintained, and the evaporation secured, by passing the honey over an extended surface of warm water.

If the honey is evaporated as soon as it is gathered in very warm weather, no artificial heat is necessary. The evaporator is arranged so that a current of air will pass over the honey.

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I have with me samples of honey cured by this means:—

Sample No. 1 was extracted as soon as gathered and passed over the evaporator three times from one cask to another. It will be seen that it may easily be evaporated until it becomes solid.

Particular attention is called to sample No. 2. This honey was extracted as soon as gathered, and was very thin. It was left in a damp place until it had fermented. The improved condition and consistency to which honey of this sort may be brought by this process may be seen by examining this sample.

I predict in the near future honey pure and unmixed will be evaporated to the proper consistency and take a high rank as desirable confectionery.

The bearing this subject of properly evaporated honey has upon holding honey from one season to another is worth our attention.

A thorough investigation of this subject by bee-keepers generally will, in my opinion, prove to be one of extreme importance.

Mohawk, N.Y.

SOUTH AMERICAN BEES.

THE following has been translated for the JOURNAL from a Continental (European) paper by Mr Schumaker, Taranaki:

"Melipons is the name of a very remarkable South American race of bees. These insects are smaller and shorter than the European bee, and are in appearance much like the humble bee. They have no comb with cells, but they build pots, which stand on legs. These pots contain about three times the quantity of honey as the common bee cell. The legs of these pots stand about one centimeter high, and form the endless passages which lead through the whole colony, consisting of many stories in height. The wax of these bees is of a dark colour: the honey is very clear and liquid. The entrances to these bee fortifications are carefully watched by guards."

A colony of these bees is at present in the botanical gardens of Munich, and Professor Dr. Siebold is engaged in studying the manners of this foreign insect.

HAUSFREUND.

QUERIES AND REPLIES.

We shall from time to time give replies through this department to questions pertaining to bee-culture, propounded by our subscribers. We would ask our correspondents to be as concise as possible, and to number their questions 1, 2, 3, and so on.

QUERY.—*Inserting Queen Cells—Uncapping—Robbing—Dead Larvæ.*—Will you please answer the following questions in your Queries and Replies:—1. When inserting a queen cell into a comb of brood, are the bees brushed off the comb, or is it put in the comb-holder and done there with the bees adhering? 2. How is the uncapping done, is the frame of honey laid flat on a table or kept upright? as the least lean either way is apt to break the comb from the frame. 3. When manipulating the bees I generally lose a lot of twenty or thirty; they seem as if disturbed and frightened, sometimes one catching hold of another and flying with him and dropping him a distance away almost lifeless. No damage is done by me, as I am very careful not to hurt one nor jar the hives or frames, it only takes place when I work amongst them examining. 5. What is the cause of a few dead larvæ in front of the hive—two or three,—they are white? By answering the above you will much oblige—Yours, &c., R. H.

REPLY.—1. It is better to brush the bees off the comb, though we often insert cells without troubling about them except to puff them out of our way. 2nd. The frames should never be laid flat when uncapping the comb. A very good uncapping arrangement for a small apiary can be made as follows:—Procure an ordinary milk dish, the deeper the better; make a light wooden framework to fit across the top on which to rest the frames while uncapping. On the underside of the framework tack a piece of wire cloth of about ten meshes to the inch, and it is ready for work. When uncapping, rest the frame of comb on the framework over the dish, keeping the comb in an upright position; now cut off the caps of the cell in a sheet, letting them drop on to the wire cloth, which acts as a strainer. The honey from the cappings will gradually drain through into the dish. Care must be taken when handling new combs heavy with honey, as they are liable to break out of the frames in warm weather if roughly handled. 3. No doubt it is strange bees trying to do a little pilfering, and taking advantage of the hive being open sneak in, but are quickly "grabbed" by the inmates. When robbers are about, hives should not be opened more than is absolutely necessary. 4. The larvæ you speak of had most likely been injured in some way, or were not perfect and the bees were getting rid of them. Bees will destroy larvæ sometimes when food is very scarce; instinct prompts them to do this to economise the food. When this occurs they should be fed liberally.

QUERY.—*Honey Plants and their Cultivation.*—SIR,—I have a query or two which I would like you to answer through the JOURNAL. 1st. What is the best mode of cultivating Rocky Mountain bee plant, California white sage, Simpson honey plant, and any other well-known honey plants from the seeds? 2nd. Botanical names for same. 3rd. Have they any commercial value apart from being honey plants, or have they any medical or other properties which might be made of commercial value? 4th. Would you name a list of the best honey plants that might with advantage be cultivated even apart from their value as bee food?—W. C. Brown, Dunedin.

REPLY.—1st. The best method of cultivating most of the honey plants mentioned and similar ones, is to sow the seeds in beds in early spring after frost is over, planting out the young plants in rows when sufficiently large to handle. The distance to allow between the rows and between the plants in each row will depend upon the size of the full-grown plant; for instance, Rocky Mountain bee plant, spider plant and Cal. white sage requires three feet space each way; while figwort, placillia and the smaller plants require much less room, say one-half the above. Spider plant, and we suppose Rocky Mountain bee plant as it is of the same family; the seeds of these are better sown where the plants are to remain, as they transplant badly. Where large areas are to be sown, the usual method for sowing agricultural seeds would be better. 2nd. White clover (trifolium repens), alsyke or Swedish clover (trifolium hybrida), sweet clover (mellilotus alba), borage (borago officinalis), buckwheat (fagopyrum escu-

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lentum), figwort (scrofularia nodosa), motherwort (leonurus cardiaca), catnip (nepeta cataria), all the herbs, mustard (sinapis alba), rape (brassica campestris), spider plant cleome pungens), rocky mountain bee plant, (cleome integrefolia), and Cal. white sage (audibertia polystachya). We might extend this list considerably, but we have given the names of the best honey plants we know worth cultivating on a large scale. 3rd. All the clovers, buckwheat, herbs, mustard, and rape have a commercial value, but we are not aware that any of the others named have—the catnip, motherwort, and borage are, of course, herbs, medicinal we believe. 4th. This question is answered in the second. We may state that the Cal. white sage is rather a tender plant, and will stand but little frost. Out of about 100 plants we had growing, the frost during the last winter has killed over 90 of them, and the remainder are just lingering "twixt life and death." We do not think this plant will succeed south of Auckland, unless close to the sea coast where there is less frost than inland.

METEOROLOGICAL OBSERVATIONS FOR THE FIVE MONTHS ENDING 30th OF NOV., 1883.

(SUPPLIED BY T. F. CHEESEMAN, ESQ., AUCKLAND.)

THE upper set of figures under the different headings, as will be seen, are the means for the month, the lower set the average of the same month for the previous sixteen years :—

AUCKLAND.

Month.	Barom. corrected (inches.)	Max. Temp. in Shade.	Min. Temp. in Shade.	Mean Temperature.	Solar Radiation.	Minimum Temp. Exposed.	Rainfall in Inches.
JULY	29·78	57·1	47·4	52·3	115·0	42 5	4·79
	29·92			51·6			4·22
AUG.	30·18	57·0	45·1	51·0	112·0	41·5	4·41
	29·92			51·4			3·93
SEPT.	30·05	60·7	47·3	54·0	124·0	40·8	1·84
	30·05			55 0			3·48
OCT.	30·07	61·4	50 5	55·9	123·0	46·4	4·16
	29·99			57·4			3·15
NOV.	29·98	65·8	51·7	58·7	132·6	45·3	3·49
	29 96			60·9			3·01

JULY.—Remarks : From 1st to 4th showery, with S.W. winds ; 5th and 6th fine, wind veering to N.E.; 7th and 8th, easterly gale, with rain; 9th, fine and warm ; 10th to 22nd, mostly showery, with variable winds, but chiefly from W. or S.W.; 23rd, fine and clear, with very severe frost ; 24th, fine and warm, wind changing to N.E.; 25th and 26th, strong N.E. gale, with heavy rain, 1·10 inch being registered on the 26th ; 27th to end of month, mostly S.W. winds and slight showers. Maximum temperature in shade, 61°; minimum in shade, 36°; minimum exposed, 30·5. Atmospheric pressure under the average of previous years; mean temperature above ; rainfall slightly above the average.

AUGUST.—Remarks : From 1st to 13th mostly fine clear weather, with light southerly winds, barometer unusually high ; slight showers on 4th, 9th and 11th ; 14th, cloudy and threatening, with stiff N.E. breeze ; 15th to 19th, squally and showery, with variable winds ; 20th and 21st, fine but cloudy, with strong westerly breeze ; from 22nd to 25th, S.E. winds, with much cold rain, 1·02 inches being registered on the morning of the 24th, 23rd and 24th being particularly cold, wet and disagreeable, snow falling in several places in the vicinity of the town ; from 26th to 29th, showery and squally, with westerly winds ; 30th, wind shifting to N. ; 31st, strong N.E. gale, with heavy rain, 1·3 inches registered, Atmospheric pressure above the average of previous years ; mean temperature slightly under ; rainfall above the average.

SEPTEMBER.—Remarks : From 1st to 9th squally and unpleasant weather, with a N.E. gale on the 6th, and low barometer (29·16) ; middle portion of the month from 10th to 23rd unusually fine and clear, with light variable winds and very high barometer, reaching 30·57 on the 20th ; from 24th to 27th, cloudy and gloomy, with occasional slight showers ; from 28th to 30th, squally and unpleasant, with westerly breeze, hailstorm on the morning of the 30th. Atmospheric pressure and mean temperature about the average of previous years ; rainfall small, hardly more than half the average, and the least recorded for the month since 1872.

OCTOBER.—Remarks : 1st, 2nd and 3rd with light S.W. winds and slight showers ; from the 4th to the 8th fine and warm, with light, variable winds, mostly from N.E. ; 9th and 10th, strong breeze from N.E., shifting to W., with rain ; 11th to 14th, unusually severe westerly gale, with hard squalls and occasional hail, barometer falling to 29·45 ; 15th to 19th, mostly fine, but with occasional showers, wind variable, heavy rain on the morning of the 23rd ; 27th to 29th, fine, but rather cloudy ; 30th, N.E. gale, followed by heavy rain, 1·19 inch registered, wind shifting to S.W. Atmospheric pressure above the average of the previous sixteen years ; mean temperature considerably below ; rainfall much in excess.

NOVEMBER.—Remarks : 1st and 2nd, fine ; 3rd and 4th, unsettled and showery, with thunder ; 5th to 9th, fine, but rather cool and cloudy ; on the 10th, 11th and 12th, N.E. gale with heavy, but not continuous rain ; from 13th to 21st, very showery and variable weather, wind varying from N.W. to S., thunderstorms on 18th and 19th ; 22nd and 23rd, fine and warm ; 24th to 27th, warm and close with occasional showers, thunder on 26th and 27th ; 28th to end of month, fine, clear, and calm. Weather on the whole singularly variable for the time of year. Barometic pressure slightly above the average of the previous sixteen years ; mean temperature much below, and the lowest recorded for the month since 1867 ; rainfall above the average.

HONEY MARKETS.

AUCKLAND, January 1st, 1884.

We beg to quote honey as follows :—Wholesale, 1lb tins, 8s to 8s 3d per doz.; retail, 1lb tins, 11s to 12s per dozen. Bulk honey, wholesale, 4d per lb ; retail, 5d per lb. Extra fine, 6d per lb.

AUCKLAND AGRICULTURAL AND MERCANTILE Co., Limited.

ENGLAND.

By last mail news, honey was still in good demand at average rates. The value of honey imported into the United Kingdom during the month of August, 1883, amounted to £6,262.

—*British Bee Journal.*

AMERICA.

NEW YORK, November 15, 1883.

HONEY.—White clover and basswood in 1 lb. and 2 lb. sections, 17 @ 21c.; dark to second quality, 14 @ 15c.; extracted white clover, in kegs and barrels, 9 @ 10c.; dark, 8c.

BEESWAX.—Prime yellow, 27 @ 29c.

H. K. & F. B. THURBER & Co.

SAN FRANCISCO.

HONEY.—There is a fair jobbing trade. Offerings are not large. Choice qualities command extreme figures.

	c. c.
White to extra white comb	16 @ 20
Dark to good	10 @ 13
Extracted, choice to extra white	8 @ 9½
Dark and candied	6½ @ 7½
BEESWAX—Wholesale	27 @ 28

STEARNS & SMITH, 423, Front-street.

—*American Bee Journal.*

SPECIAL NOTICES.

WE have added two extra pages to this issue in order to give space for correspondence and other matter that was crowded out of our last.

QUERY AND REPLY DEPARTMENT.—Correspondence for this department should reach the editor not later than the 15th of each month, when replies are required in the next issue.

ADVERTISING DEPARTMENT.—Advertisements for the next issue should reach the publisher by the 24th of each month.

Correspondence for publication may be sent at book post rates *i.e.*, one penny for every two ounces, providing the book post regulations are complied with, and the words "Press Manuscript" are written on outside of cover.

P.O. Orders for Subscriptions, Advertisements, &c., to be made payable to J. C. Firth, Chief P.O., Auckland, and sent under cover to H. H. Hayr, High-street, Auckland, or P.O. Box 186.

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Quarter column... ...	0 8 0	Quarter page ...	0 17 6
Half column	0 15 0		
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THE NEW ZEALAND AND AUSTRALIAN

BEE JOURNAL.

Devoted exclusively to Advanced Bee Culture.

VOL. I. No. 8.} AUCKLAND, N.Z., FEBRUARY, 1884. {Published Monthly, Price Sixpence.

THE NEW ZEALAND AND AUSTRALIAN BEE JOURNAL

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All correspondence intended for publication to be addressed to the Editor, Matamata, Auckland, New Zealand, and business communications to the Publisher, P.O. Box 186, Auckland, New Zealand.

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CALENDAR—FEBRUARY.

For the first time this season we have to record the fact that for a short period our bees have had an opportunity of gathering a considerable amount of honey. From the commencement of January to the date of writing (22nd), we were blest with short spells of splendid honey weather, when our hives, which had previously become rather light in weight of honey, were rapidly filled, and top boxes became the order of the day. The weather has now again broken and heavy rain set in, which, from present appearances, is likely to continue for a day or two. We have had lately some very cold nights, the thermometer registering 36 degrees on the night of the 19th, and on several occasions falling below 40 degrees. The rain now falling will, no doubt, have the effect of prolonging the blossoming of the various honey plants now in flower, and we shall not be surprised to see the honey season last a month or six weeks later than usual, although we do not expect it to be anything near up to the average.

We do not remember ever having seen dandelions flowering in such profusion as they have done during the last few weeks. Our paddocks in consequence have appeared as if covered with immense yellow sheets, which on a bright day could be seen for miles. The honey from dandelions, although not nearly so plentiful, we consider almost equal to white clover honey. Thistles also appear to be more plentiful this season than usual. This is another excellent honey-yielding plant. Thistle honey is considered by some to be superior to clover honey. Whether it is so or not we cannot say, but we do know that it has a most exquisite flavour and colour. Amongst the honey plants we are cultivating and have in flower at the present time, are: figwort, giant mignonette, *limnanthus Douglasii* mustard, and a little mellilot clover. All these, without doubt, are first-class honey-yielding plants, and well worthy of cultivation on a large scale. Our giant mignonette has been in blossom about two months and apparently will remain so for at least another month or six weeks, and whenever the weather will permit it is

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covered with bees from morning to night. Figwort, of which we have about 1400 of last year's plants set out for seed, is now coming into blossom. Judging by our experience, we believe this plant to be one of the very best to cultivate for honey. *Limnanthus Douglasii* has been in blossom about one month, and shows no signs at present of fading; this also keeps the bees busy, and is valuable to the bee-keeper as it may be made to blossom in very early spring. Mellilot clover we take to be equal to figwort for honey, and like the latter remains in blossom for about three months, yielding honey the whole time if the weather is at all favourable. We have about two acres sown with spider plant, figwort, and mellilot clover seeds; the plants are up, but are coming on very slowly. We intend to give shortly an article on "Planting for honey," when we will go into this matter fully.

We have had a slight touch of the "swarming fever" that we predicted would come about the first opportunity. Some of our colonies have persisted in spite of all we could do to prevent it; however, by "doubling" and returning, we have managed to keep down our increase within what we think reasonable limits considering the season. Swarming should now be kept down by all possible means, and the weakest colonies strengthened by giving an occasional frame of brood from the strongest. Nuclei may also be built up now in the same way. Our caution with regard to taking surplus honey, given in last month's calendar, should be attended to, as every week will now make a vast difference to the length of the remaining part of the honey season. We have not yet heard of much surplus honey being taken; but, on the contrary, up to a late date the reports received have all been to the effect that little or none was expected.

We have just had some enquiries *re* marketing honey, and are now ascertaining the price of labels, &c., with a view of giving an article on this subject in our next issue.

COMB-FOUNDATION AND HOW TO USE IT.

We had almost thought that every bee-keeper in the Australasian colonies knew by this time what artificial comb foundation is; but, judging from occasional letters we receive, there are some who have only heard of it for the first time through the Journal, and we have been asked to give the particulars of what it is and how it is used.

Comb foundation is thin sheets of beeswax bearing the impressions of the base of the bees' cells on each side of the sheet. These impressions are made by passing the sheets of wax between engraved rollers, which are usually made to impress worker cells, of which there are 25 to the square inch. Very little drone cell foundation is made or used now, as it has been found to encourage the breeding of drones, a thing not desirable, as sufficient drones can be bred to answer all purposes in hives where all worker foundation is used. Should a little extra drone comb be required it can easily be secured by putting a frame or two in a hive during the honey season, containing a narrow strip of worker foundation as a starter or guide. These frames should be put either in the top box or at the sides of the brood nest in the lower box; the bees will then fill the frames with drone comb. The foundation as usually made is about $\frac{1}{8}$ of an inch thick, including a small portion of the side walls of the cells. The prepared sheets are then cut to fit the frames of the hive, but are not cut to the full size of the insides of the frames, as sufficient space must be left between the sheet and the frame all round to allow of expansion, as the heat of the hive and adhering bees cause the sheet to expand, and if there is not space to allow of this, the sheet would bulge out in places and so spoil the combs. The sheets are fastened into grooves running along the underside of the top bars of the frames, one edge being first pressed in and a little melted wax run along each side. About $\frac{1}{4}$ of an inch space at the sides and $\frac{3}{4}$ of an inch at bottom is usually allowed between the frame and sheet, thus the sheet is hanging loosely from the top of the frame, as in fig. 1. To insure the combs being built within the frames, the hive should be standing perfectly level so that the frames may hang plumb. Sometimes the sheet may be thrown slightly out of plumb by an unequal weight of bees working on one side, or the lower edge of the sheet may curl a little and encroach on the space required for the adjoining comb. There is a very simple device, however—shown, in the engraving—which will prevent the sheet getting out of place and help to support it while being worked out:—

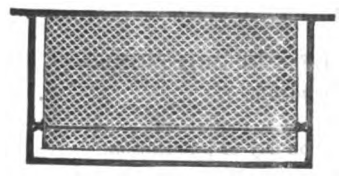

Fig. 1

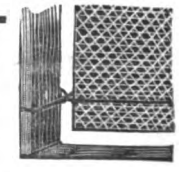

Fig. 2.

Fig. 1. represents a frame of comb foundation. Fig. 2. is a section of Fig. 1. About 1½in from the bottom of the sheet, a thin piece of twine is passed round one end bar of the frame, then crossed (as shown in fig.), and one part taken along each side of the sheet, crossed again, and tied at the back of the other end bar. The twine need only be tied sufficiently tight to prevent it slipping down the end bars. There is another method of fixing the twine, *i.e.*, by boring a small hole in each end bar and passing the double part of twine through one, putting a small toggle in the bight, and fastening the two ends after passing them through the other hole. This simple arrangement will be found of great value in securing straight combs. The twine may be removed after the combs are fastened to the end bars. For particulars regarding the value of comb foundation to the bee-keeper, we refer our readers to chapter VII. of the *New Zealand Bee Manual*.

SUCCESSFUL IMPORTATION OF ITALIAN QUEEN BEES DIRECT FROM ITALY.

In our December issue we stated that we expected shortly a trial consignment of queens from Italy; these queens have now arrived, and the venture has been attended with what we consider a very fair amount of success.

In July of last year we sent an order to Italy for eight queens, merely as an experiment, to test the matter whether they could be forwarded successfully such a long distance or not. We received a letter in due course, stating that they would be shipped at Naples on the 10th of November, 1883, on one of the "Orient"

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steamers. The next mail brought us the bill of lading and the bees. They landed in Auckland on the 9th of January, 1884, and reached Matamata on the 11th, when they were unpacked. The package containing the queens consisted of a framework made to hold eight miniature hives, each hive being about 7in. square, in which was three small frames of comb and an arrangement for supplying the bees with water. Into each of these hives a queen had been placed, accompanied by about 200 workers, air being supplied through holes in the hives, covered with wire cloth. On opening them we found four queens alive, with a few worker bees to each, the remaining queens and bees being dead. As those that were alive appeared to be weak from their long confinement, we gave them some fresh honey and water, and allowed them to remain in the small hives till the following day. By this time they had recovered strength, and the queens had become quite lively. We then caged and introduced them to small colonies, using the cage described in the October number of the JOURNAL. In less than twenty-four hours they had been liberated by the bees, and have now taken up their duties apparently none the worse for their long journey. Great credit is due to Mr Chas. Bianconcini—the gentleman to whom the order was sent—for the admirable manner in which the bees were packed, as the success or otherwise of a venture of this kind depends solely on the packing. Two of the miniature colonies had died from sheer starvation, as they had neither honey nor water left; the other two had plenty of honey but no water.

This introduction of bees direct from Italy marks another epoch in the history of bee-keeping in New Zealand. Should sufficient inducement offer, we will send an order for a large batch, to arrive here in October next, so that if any of our customers would like an imported queen, by notifying us before the end of April we will arrange to get them one; the price would be about £2 each. With the heavy expenses, risk, &c., this is the lowest price we could supply them at. We should give them a fly, and re-arrange their food and water before sending them on to their final destination.

OUR COMB-FOUNDATION.

SOME few weeks back we received a letter stating that a report was being circulated that we were adulterating the wax from which we made our artificial comb-foundation with paraffine or some composition. This, of course, was tantamount to accusing us of roguery in selling our customers an article made from other material than what we represented it to be. We at once wrote a letter to the gentleman whom we were informed had made statements to the above effect, telling him of what we had heard, and asked him if it was correct; after waiting several weeks for a reply, we received the following for publication:—

To the Editor A. and N. Z. BEE JOURNAL.

SIR,—Having heard statements made which caused me to think and believe that the material used in the making of your comb-foundation was not pure beeswax, but some kind of composition, I forwarded a sample of it to Mr Pond, Analyst for Auckland Province, for analysis, and I herewith hand you a copy of his report for publication in the JOURNAL. The sample was taken from a box obtained from Mr Hayr, in the ordinary way of trade, and that gentleman had no idea that any of the purchase was intended for analysis. I have to congratulate you on the result of the test, which I may state was also made without any knowledge on your part, and I trust that the publication of Mr Pond's report will have the effect of causing all the bee-keepers in Australia and New Zealand to do as I have always done and recommended, viz., use the foundation in full-sized sheets, and not in starters only, the latter practice being, in my opinion a "penny wise and pound foolish" economy.—I am, yours, &c.,

JAMES DALZIEL.

Pukekohe, December, 1883.

The following is the report of the analysis:—

Dr. DALZIEL, Pukekohe.

SIR,—I have made an extended examination of the sample of artificial comb submitted by you on the 6th inst., with the result that I find it to be a fairly good sample of beeswax, containing no foreign substance.

Melting Point	...	...	...	145° Fah.
Specific Gravity	...	...	.	·96,117
Ash ...	.	...	...	.. A trace

Substances not wax, fragments of bees' wings and legs, pollen grains, and water.—I have the honour to be, Sir, your obedient servant,

J. A. POND,
Colonial Analyst.

Laboratory, Queen-street,
Auckland, December 12, 1883.

Although Dr Dalziel has done what, of course, he had a right to do to satisfy himself whether we were practising an imposition or not, i.e., in getting an analytical test of the comb; still, we think he should have done this in the first instance, as soon as he suspected it was adulterated, or at any rate, before he made mention of it to others, and not have left it till written to on the subject.

With regard to our comb, we may state that in making it we could not possibly be more particular in keeping it free from impurities than we are. The beeswax of commerce is usually in a very dirty state, especially on the outside of the pieces; these are all thoroughly scraped, and every ounce is then put through a double refining process, in special boiling water baths, before being made into comb. We sometimes get amongst the large quantities of wax we purchase pieces that have been adulterated, but having now handled some tons of wax, we can easily detect them; these are laid aside, to be sold eventually to a candle factory; at present we have nearly a half cwt. on hand. A second thought should convince any person that whatever is sent out from the Matamata Apiary is, as far as we can possibly know, exactly what it is represented to be, for we should have everything to lose and nothing to gain in deceiving our customers, and we know that the proprietor would not lend himself to any kind of deception.

Since we have been connected with the bee industry we have done our utmost to promote it in every possible way, sparing neither trouble nor expense to further the interests of bee-keepers, and we believe those who have known us longest will give us some credit for honesty of purpose in this respect. Should, however, there be any kind of misunderstanding amongst any of our customers with regard to goods obtained from us, we shall only be too glad to explain or rectify any mistake that may have been made when notified.

WE are again indebted to our esteemed correspondent, "T.J.M.," for a very interesting paper on the "Geographical Distribution of the Honey Bee," the first part of which appears in this issue.

The advancement of knowledge in apiculture, and the introduction of several varieties of the honey bee

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into countries where formerly the German bee only was known, has, of late years, caused considerable interest to be taken in this subject, more especially amongst practical apiarists, some of whom, with an eye to business, have spared no expense or trouble to ascertain whether there are any new and improved varieties as yet unknown existing on the face of the globe. Our correspondent's paper will be found to contain much valuable information to the practical bee-keeper.

ENGRAVINGS.

We intend shortly to have engravings made for the Journal of the various appliances we have, and any of importance, that may from time to time be brought into use. We shall be glad to receive from any of our readers, diagrams and description of improved appliances.

GEOGRAPHICAL DISTRIBUTION OF THE HONEY BEE.

BY T. J. M.

At one of the usual yearly congresses of bee-keepers from all parts of Germany, held in the year 1862 at Potsdam, near Berlin, Dr. A. Gerstaecker read a paper upon the "Geographical Distribution and the Varieties of the Honey Bee." That was, I believe, the first time that the subject was treated in a comprehensive manner with the aid of scientific knowledge and historical research, and it must therefore be regarded as an important contribution to apiarian literature. Four years later Dr. G. published an article in a German periodical,* giving the substance of his former paper with some additions and corrections rendered necessary by further investigations made in the mean time. This letter has come under my notice since I wrote my remarks on the closely-allied subject of "Climate and Bee-culture;" it seems to me to throw light upon many points which I have hinted at as worthy of consideration, and as many of the results arrived at by the Doctor will no doubt be new to the majority of the readers of the Bee Journal, as they were to myself, I think it may be useful to give a short resumé of them here, adding a few observations gleaned from other sources, and bearing more particularly upon the subject as it relates to this part of the world. Dr. Gerstaecker commences by stating that up to within some ten years of the time when he was writing, bee-keepers knew only one sort of honey bee—that which had been reared for ages, the *apis mellifica*, of Linnæus—but they then (in 1862) distinguished the German from the Italian bee. The latter had, in fact, been noticed in the beginning of this century by Spinola, and by Latrielle, as a separate species of the genus apis, and was named by the former zoologist, *apis ligustica* Nevertheless it proved to be only a coloured variety of the same species, the size, as well as the structural peculiarities of the insect, being the same in every respect, and the two sorts admitting of cross-breeding to any extent, whereas if they belonged to two separate species the offspring would, in all probability, consist of unprolific hybrids. The knowledge of the practical apiarist was, at all events, then confined to these two varieties of the honey bee, and they were supposed to be indigenous almost exclusively to Europe, the northern coast of Africa being their supposed boundary on the south, and the coast of Asia Minor on the east. When Dr. G., however, undertook his investigations he obtained samples of a large number of varieties mentioned in the works of Fabricius, Latrielle, Lepeletier, and others, as being found in various parts of Africa and of Asia, north of the Himalayas, and subjected them to a minute examination comparatively with each other, and with the two varieties already known in Europe. He soon satisfied himself beyond all doubt that they were all merely varieties of the one species, the *apis mellifica*, differing only in colour and size—all capable of being cross-bred and of being utilised by the apiarist. He also found that this one species, represented by so many different varieties, was spread over a vastly larger area than had been supposed, comprising nearly the whole of Europe (up to 60, and even 64, degrees of north latitude in some places), the whole continent of Africa, from Algiers to the Cape, and from Senegambia to the Red Sea, and the whole of Asia Minor, Syria, and Persia, and other portions of Asia north of the Himalayan range up to Eastern Siberia and China.

Out of the numerous varieties brought under review, six have been selected as being of sufficient importance to be separately dealt with. These, with their distinguishing marks and the regions to which they seem particularly to belong are classified and described as follows :—

1. The single colored, dark, northern or German bee (*Apis mellifica* of Linnæus), found in the whole of north and middle Europe, and also in South France, South Spain, Portugal, a few parts of Italy, in Dalmatia, Greece, at the Crimea, and along the Coast of Asia Minor, including the adjacent islands. It is also found in the African Continent, at Algiers, Guinea, and at the Cape of Good Hope, to which latter place, however, it was possibly introduced direct from Europe. As a very slight sub-variety of the same may be noted the Hymettus bee (*Apis Cecropia*), differing only in being slightly smaller and more hairy, often also showing reddish spots on the sides of the second abdominal ring. This bee is found in south Spain as well as in Greece, and even in some isolated cases in Germany.

2. The Italian bee (*Apis Ligustria* of Spinola), of equal size with the German bee, but with golden yellow color on the first three abdominal rings, whilst the back plate (between the wings) is still of a dark color. It was first noticed by Spinola as being peculiar to all parts of Liguria. Its first or original habitat was difficult to be ascertained in 1862, as during the previous ten years it had been artificially distributed to many new places. Although to be found in various parts of middle Italy it is by no means general in that country; besides the province of Liguria, the southern slopes of the Tyrolese and Swiss Alps would appear to have been its original home. The introduction of this variety into Germany was first effected by Von Baldenstein in 1843, but without much importance being attached to it until its repeated importation and acclimatisation by Dzierzon in 1853, attracted the attention of all bee-keepers. How generally it then became adopted, and how great the preference given to it over the German bee is well known. According to Tegetmeyer it has

* "*Ergaenzungsblaetter zur Kenntnis der Gegenwart*, vol. I., Hildburgshausen 1866.

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also been naturalised in England since the year 1860.

3. The Italian bee, with yellow back plate, otherwise of the same size and same color of the body as the last. It is found in South France, Dalmatia, Banat, at Sicily, and at the Crimea, in the Islands and on the Coast of Asia Minor, and in the Caucasus, and in many of those places in common partly with the Italian (No. 2) and partly with the German bee.

4. The Egyptian bee (*Apis fasciata* of Latrielle). It is nearly one-third smaller than the German or Italian bee, its body coloured like the latter, and the back plate also yellow, the hair of the chest and body whitish. Its proper habitat is Egypt, Arabia, and Syria, but it is found with scarcely any observable difference on the northern slopes of the Himalayas and in China. It was introduced into Germany in 1863 by the Acclimatisation Society of Berlin, and thence into England in 1865.

5. The specific African bee (*Apis Adansonii* of Latrielle) is of the same size and colour as the last, but differs in the greyish yellow colour of the hair on the chest and body. It is spread over the whole African Continent, with the exception of Algiers and Egypt, from Abyssinia and Senegambia to the Cape of Good Hope.

6. The remarkably black Madagascar bee (*Apis Unicolor* of Latrielle) is something smaller than the German bee, all dark coloured, and its hairs black. It is confined to Madagascar and the Mauritius.

From this review of the distribution of the honey bee in the Old World, Dr Gerstaecker turns to those lands to which it has been introduced from time to time, as shown by historical records, namely, to N. and S. America and Australia.

(To be continued).

APICULTURE IN QUEENSLAND.

BY. C. FULWOOD.

We have been having a grand time of it this season with the honey gatherers; it has been dry and not too warm, hence there has been less swarming and more honey than was the case last season, which was warm and damp; so that there was just enough fodder to keep a mass of brood rearing, and no surplus for the owner, but too many stocks. The honey we have been getting is remarkably thick, great care being required in extracting—in fact it was almost impossible to get it from the combs. I am a strong advocate of wired frames after some experience with both. By that means we ensure straight and good comb within the frame, and it will hold its own either in the extractor or on travel. Unless something superior to wiring is discovered I think this will become the rule; I shall not be satisfied until all mine are wired, except those required for queen raising, a comb one can cut up is then most useful.

The successful introduction and establishment of Italians has aroused some enthusiam, and induced numerous enquiries from all quarters. Victoria, New South Wales, South Australia, are sending to Queensland for Italians!

Why not send to Italy? Bee-keepers must learn how to deal with queens arriving with just a few workers, so as to ensure almost universal success. Of course, there is some risk; this gives zest to the enterprise and tests a man's pluck and skill.

The means of obtaining genuine information are now so numerous that all persons feeling any inclination to succeed in bee-culture need not remain ignorant of any of the modern modes of operation. Ignorance does prevail to a great extent. Persons who have had numerous stocks know but comparatively little about bee management, in fact bees have been left to manage themselves. How such persons stare in perfect amazement when informed of some of our new-fangled notions, yet not much new is there under the sun in bee-keeping except in practice.

This ignorance must pass away before the disseminating of bee literature, and the practical teachings of modern exhibitions.

The supplanting of the black bee by the yellow-banded ones, the introduction of movable combs, extractors, etc., etc., will work out a reformation, and awaken an intelligent interest in the charming and profitable pursuit of apiculture. I note that some one was asking about a house apiary. My experience with one for several years leads me to this conclusion: That if I were working on a large scale I would have the major part of the bees out in the open, but at the same time would like a house for a number of hives for experimental and queen-breeding purposes, where I could handle them in any weather. My opinion is that a combination of various plans gives the apiarian the advantage over those who rigidly work only on one line.

Brisbane, Queensland, Dec., 1883.

MEMS. BY AN OLD BEE-KEEPER.

Continued.

A few weeks ago one of my hives was not working well, and I stood by it some ten or twelve minutes to notice the bees. To my very great surprise, three Ligurian bees came to the entrance and two of them went into the hive. That stock died a week or two after. Now, I don't know any person, except Mr Kohl (or Karl), who keeps Ligurians, and as the crow flies his place must be fully three miles from here.—To return to Mr Fox: After the lecture and meeting was over he returned with me to my house, where he slept. I asked him when he had written his lecture, and he said about ten or eleven years ago. Then I advised him to see his cousin, B. Fox, the dentist, at Exeter, also Mr Woodbury, as there had been a revolution in bee-keeping during that time. He did so, and in a few months after he wrote me to say he was a convert to the new bar and frame hive system. About this time Mr Woodbury wrote asking if I could spare him a queen, either fertilised or maiden. I called upon Dr Jewel, of Dartmouth, formerly of Cornwall, and an old bee-keeper, telling him that I wanted to send a live queen by post to Exeter. He gave me a round, flat wood box, about three inches diameter; with a bradawl I made about a dozen holes in the top and bottom of the box. Into that box I put the queen and a few workers, pasting the address round the edges. It was duly posted, and Mr W. got it safe on the same day, a Saturday.

A few weeks after I was going to London by rail, and Mr Woodbury saw me on the platform at Exeter, when he told me that instead of going to church the day after he got my queen, himself and a friend dissected her and another queen under a powerful microscope, one being a fertilised queen and the other a maiden queen. Their object was to discover the differ-

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ence in the ovaries of the two queens. In one of the latter's ovaries they could see nothing but a pure liquid, and in the fertilised queen what appeared like thousands of wriggling mites. Perhaps it will be well to explain here to new beginners in bee-keeping that a maiden queen can lay *drone* eggs *only*, but that the same queen fertilised has the power, *at will*, of laying either working bee eggs or drone eggs; and in proof of this she always drops the eggs in the cells adapted to bring them to maturity, the drone cells being much larger than the working bee's cell. The drones are males, but the working bees are neuters, or undeveloped females, and from young neuter eggs the bees can raise the full-developed female, or queen; and it is by acting on this wonderful provision of nature that queen-breeders, for sale, work.—In 1863 I removed from Dartmouth to Exeter, taking one stock of bees with me, but they never did well, although I tried various hives, including the Stewarton Hexagonal hive and a modification of the Polish hive. I would strongly advise all intending bee-keepers to confine their attention to the bar and frame hive, or Langstroth principle, it is far the best and most profitable. In New Zealand, time is money, and to spend your time and labour in trying the various systems of collateral or nadir hiving really means so much loss of money, and is very apt to greatly try one's temper. I recollect calling upon Mr Woodbury one day, when he greeted me with—"Well, I am glad you are come; I want to show you an improvement." We went into his garden, where he had over 20 hives. He walked up to the back of one and lifted off the cover. I asked about his bee-dress. "No," he said, "I don't use it so often." His improvement was having the top board, *now a mat*, in two halves, so that you could operate on one side of the hive without disturbing the other. The moment he lifted one board, four or five bees sent their spears into his neck. He dropped the board and walked away. It so happened that within a fortnight before he had been writing for a periodical about the docility of his Ligurian bees, so I told him that he had not mentioned this particular hive, and they were reminding him of their capabilities. On another occasion I called to tell him that I had been to an horticultural exhibition, where prizes were given for the best super of honey collected that season. I was surprised at the weight, and felt convinced that it had not been all gathered that season, and told him so. After a long talk he said, "Well, I have known it done in this way: a large super with glass sides was placed on a very strong stock, covered with a stout box; at the end of the season, the super was taken off and the bottom was covered with good clean white paper, pasted round the edges—a second paper over the first to make it as air-tight as possible; it was then packed away in a dark place until next spring. Early in the spring two good stocks were united—fed well—then the partially filled super was brought out, the paper torn off, the pasted parts cleaned, and the super then placed over the united stock, to be well filled for prize taking." In a climate like New Zealand possesses such roguish tricks need not be resorted to. Mr Woodbury went many miles round Exeter to cottagers who were in the habit of using brimstone to get the honey; he would drive the bees, and then take them home for his trouble. The cottager got cleaner honey, and Mr Woodbury destroyed the old queen, and gave them a Ligurian queen; and that stock was sold at a higher price, because in a short time it would be a Ligurian stock. Another hint to new beginners may be useful here—the necessity of cleanliness in the hives. At Exmouth I had two straw Woodbury hives, one empty. A few months before I left home in 1880, a neighbour asked me to hive a swarm of bees for him. I did so. I had often done so before for him, and always had to tell him that his hives of common straw were kept too dirty to put bees into—as I constantly reminded him that bees liked cleanliness. The bees were hived about 11.30 a.m.; at noon I went by rail to Exeter, and on my return at 5 p.m., as soon as I entered my house I was told that Mr S.'s bees had left his hive, and had gone into my straw Woodbury hive—there I found them. I passed the hive to him, and no doubt it is in his garden at this moment. Another instance of want of cleanliness: The Sunday after I came on to this farm, myself and son were walking round the fields when we found a lot of bees issuing from a rabbit hole; the next day I dug them out. I had nothing handy to put them in except a box that had brought up two tins of kerosene. This was brushed out, and the bees were put into it, but before three days had passed they left the box and joined the bees in another box. I hope, Mr Editor, these mems. may save time, expense, and disappointment to some young bee-keepers, by preventing useless experiments with the many fancy hives so often offered for sale, with "useless" wonderful improvements. Let them be guided by old practical and experienced bee-keepers, and the Editor of the N. Z. Bee Journal.—Yours, etc.,

J. Newland.

Ngaroto.

(*For the N. Z. and A. Bee Journal.*)

All correspondence must bear the name and address of the writer, not necessarily for publication, but as a guarantee of good faith.

BEE-KEEPING IN SOUTH AUSTRALIA.

Sir,—I continue to read the Bee Journal with pleasure and profit, and wish you success in your efforts to promote rational, merciful, and profitable bee culture.

Bee-keeping with me is merely a hobby, a recreation the pleasant utilization of the few spare hours of a busy life. Nevertheless, by patient perseverance I have attained some measure of success quite sufficient to encourage me to proceed, and perhaps if my experiences were known enough to induce others to cultivate an acquaintance with these very interesting and useful insects. I begun with a single swarm, presented to me by a friend; I read no end of bee literature; made hives of various kinds; encountered and overcome many difficulties. Experience has taught me more than all the books, and I have at length adopted a definite line of action and arrangements as to hives and manipulation, which I find quite satisfactory; and now I have my little apiary compact, easily managed, and giving me a

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very encouraging return. I have extracted to the present time 168lbs. of splendid honey; have four hives with twelve 2lb. super boxes on each; have removed some full and completely capped fine specimens of comb honey. If you think that my system of management (which is somewhat peculiar) is likely to be of any use to amateur bee-keepers who are making a start, I shall be happy to furnish you with a few articles upon the subject. Nothing that I may have to say will be of any use to the scientific bee master; if I write it is not for him, but rather for those bewildered amidst the multiplicity of counsel contained in the bee books, who may, perhaps, be glad to read the plain, unvarnished tale of one who has tried many things, and at length settled down to a practice which seems something near the right.

W. J. Thomas.

Geelong, 14th Dec., 1883.

P.S.—I note in your last number a marvellous smoker mentioned, one that continues smoking from dawn to dark. Would your correspondent kindly describe the creature fully. I should like, above all things to construct one. In the handling of bees there is nothing like smoke, and plenty of it.—W.J.T.

[We congratulate you on your success, and shall be very glad to receive a full description of your system of management, more especially as the result is so satisfactory. Mr Stevenson will, no doubt, oblige us by describing fully the make-up of the smoker he speaks of.—Ed.]

APICULTURE IN VICTORIA.

Sir,—The December number of the Journal has come, and as it contains an article which was not intended for publication, I feel duty bound to make a few remarks on it. I did not say, in my letter to you, Mr Editor, that I sold honey at 3d. per lb., but simply stated that there was plenty disposed of at that price in Victoria. I sold my comb-honey at 8d., and strained honey, first quality, for 6d.; second do., 4d per lb., and although I know that the new appliances you mention are very good, and probably increase the quantity, they can in no way improve the quality of honey. My honey is well known throughout this district, and people from Geelong and other towns send orders for honey from 'Old Naveau.' I may also state that, before other bee-keepers in Victoria knew that there would be a good honey season, a great deal of mine was already sold. And again, I find you are mistaken in regard to the resources of honey in Victoria. The most of the honey obtained here comes from the gum trees; now these do not flower every year, only some years, and at times they flower in the winter months, and then the rain washes away all the honey they may secrete. The season of 1868 was the best one for honey I ever experienced, but it did not last so long as the season of 1882-83. In '68 it commenced in October, and lasted until the middle of March, and the gum leaves looked just as if they were varnished. When I pulled some and applied them to my tongue, I found they were actually covered with fine honey dew. In '82, however, I did not notice this, but the gum trees begun to flower as early as September, and a great number were still in flower at the middle of the month of May, '83. So you see we had a honey season which lasted more than nine months, for long before the gum trees begin to break forth, in July, the almond trees flower, then come peaches and many other fruit trees, but this season there are no gums in flower; hence it will not pay to get comb-foundation, honey extractors, and Italian bees, etc.

When I read in the Journal that comb-foundation could be got in Melbourne, I got some at once, made Langstroth hives, and all the swarms that issued since, I hived in Langstroth hives, with whole sheets of comb-foundation. So much for the present. In my next I shall be able to tell you more about my success with the Italians I have procured.

H. Naveau.

Hamilton, Victoria, December, 1883.

[Your former letter being addressed to the "Editor," we, of course, looked upon it as being sent for publication, more especially as it contained questions; when writing to us in future, please mark "Private" anything not for publication. With regard to your statement that modern appliances "can in no way improve the quality of honey," we admit as being correct, but taking honey without them destroys its good qualities, so that, as far as the consumer is concerned, it amounts to the same thing. We are very glad to know that you are giving improved hives, comb-foundation, Italian bees, etc., a trial, although you don't "believe" it will pay to get these things. We expect to hear shortly that you have a different opinion on the matter.—Ed.]

SHOWS AND EXHIBITS OF BEE-KEEPING APPLIANCES.

Sir,—Both Mr Robinson and myself entirely agree with Mr Bagnall's suggestion that "bee-keepers and apiarians should join and make such a display of their wares as has never yet been made in this province or Colony" at the coming Gardeners' Horticultural Exhibition in March next, and we will do all in our power to encourage the bee-keepers of Northcote and the surrounding district to show their honey, etc.

We shall be unable to show any honey this time, having only just started bee-keeping in this neighbourhood, but we have several appliances which would, no doubt, help to make the show interesting. There are so many advancing bee-keepers in the Province of Auckland that an association might be easily started, and it would be undoubtedly much to the interest of apiculture in New Zealand. With a small yearly subscription, lectures might be given and prizes offered for honey and bee appliances at the horticultural shows throughout the province. We can speak from experience in England that the profits made by manipulating in the beetent are alone sufficient to keep an association going.

J. L. Shadwell & W. Robinson.

Northcote Apiary,
January 14th, 1884.

Honey—To Prevent Crystalising, or Granulation.—Boil the honey very slow, about five minutes, and it will keep liquid for twelve months. We have simply made it hot, then skim and strain while hot, and it has kept liquid and clear over a year.

Ngarota. An Old Bee-keeper.

[Honey should never be boiled, as it entirely destroys the flavor. If it is slowly heated in a water bath to about 170deg. Fah., and sealed up while hot, it will keep its liquid state for any length of time.—Ed.]

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FROM TARAHERU APIARY.

It is to be hoped we have now seen the end of the bad weather; such a season was never known before here. We are now (December 4) having strong nor'-west winds and bright sunny days. I had my first swarm on 26th November, and have taken ten to date. Last year swarming began on 16th October, and by the middle of November all my hives had swarmed, while the extractor was at work early in December on hives full of honey. Still, late as the season is, I am not without hope of a fair yield from the thistle, should we have fine weather through January and February. My bees have done next to nothing on the clover. It never ceased raining while it was in bloom, and it is now past its best. A few strong hives have the upper stories about half full, but swarming throws them back for a time, and I am often inclined to return the swarms, and would do so were it not that my stocks are so reduced in numbers that I must allow a certain amount of increase.

At Roseland, Mr Knight has increased from 130 (the remains of a large apiary of 400) to 200. Mr Bolton, of Ormond, is also getting a large number of swarms, and he tells me his bees have done remarkably well on the clover there. The soil being light and dry, a wet season is not so injurious as here, where the soil is richer. Last year the clover about Ormond was dried up when it was luxuriant in this district. There are besides some 200 acres closed for grass seed round his farm, while the paddocks here are crowded with sheep, and no doubt this makes a difference. Whatever the cause may be, I have less honey in the boxes than he has, so far; but, with dry weather, I have every confidence of running away from him.

I notice in *Gleanings* that A. I. Root, who visited the Convention in Toronto, gives a glowing account of the Canada thistle honey. He says:—"For whiteness, transparency and beauty of flavour, I have never met anything anywhere like it, and I must doubt if the world has ever before seen any such magnificent display of honey as the Convention gave. Friend Jones thinks that a great part of the wonderful yields that they have had in Canada have been from this same Canada thistle." This is encouraging. I can endorse all he says of the flavour of thistle honey from what I saw of it last year, and as the whole country round here is covered with it, I hope it will help to pull up the leeway.

December 17: We have had a week of very fine weather, and seeing that honey was coming in fast, I fixed up the extractor this morning and commenced with No. 1, which had six frames of capped honey. To my intense disgust, not an ounce of honey would the extractor move. Here is a pretty fix. Thinking to escape from the thick honey, which bothered me last year, I moved here, a district rich in clover, but not an ounce of clover honey have I got; and now I have 70 hives rapidly filling up with honey that I cannot get without breaking up my combs. I am quite at a loss to know what to do. The only remedy I can think of is to remove all combs not filled, or only partly full; let the bees finish the rest, and then store them till autumn, when they will come in for wintering purposes, in the meantime substituting section boxes till the thistle honey begins to flow. The only difficulty in carrying this out is that it may require more frames and foundation than I have at my disposal. I have about three weeks to tide over before the extractable honey begins.

Do you not have the same experience with manuka and other bush honey in your district?

George Stevenson.

December, 1883.

[We have no bush within four miles of our apiary, consequently we get no bush honey. The severe weather experienced during the spring, which retarded the growth of clover, no doubt has driven your bees to the bush in search of honey, but in ordinary seasons, as soon as clover begins to blossom, you will find that the bees will not "go" for anything else while the clover lasts.—Ed.]

FROM OUR CONTEMPORARIES.

BEES AS HYBRIDIZERS.

On Monday, the 9th ult., a special lecture was delivered at the Riding School Knightsbridge, by Mr Frank R. Cheshire, the subject thereof being "Bees as Hybridizers and Fruit-producers; or, the Dependence of Orchard Crops upon Bees." The lecture was given in the south-east corner of the building, on the walls of which hung several diagrams representing sections of different fruits and plants, to which the lecturer frequently referred during the course of his remarks. He commenced by explaining that the tongue of the bee is of extreme length in proportion to the size of the insect. In passing over the bloom the body of the bee becomes dusted by the anthers which contain the pollen. This pollen is conveyed from one bloom to another, in each of which it is taken up by the stigmata, and thus cross fertilisation is established. Very many blooms depend for their production on the visits of bees. The hive-bee is only one amongst the 177 distinct species of bees that gather honey from flowers. It is the most industrious of any. It faces bad weather when the wild bees will not. Anyone who will trouble himself to go out seeking for specimens of wild bees will soon find this to be the case. He will discover that in bad weather the wild bees keep safely in their nests at home. He (the lecturer) remarked that the value of bees in fertilising fruit-trees was strikingly illustrated to him some time ago. He had heard of a lady in Derbyshire, who made large profits from her orchards. She was the possessor of several hives of bees, but evidently did not know how these insects were co-operating with her in the production of the cherries. For some reason or other she decided to give up her bees. The result was most disastrous to the yield of the orchard.

He then pointed to some diagrams showing sections of two kinds of primroses, the thrumb-eyed primrose and the pin-eyed primrose, and described the means by which one kind is fertilised by the other through the medium of the bee. It was not generally known the reason of apples falling from trees, and in many cases the popular notions on this subject were quite erroneous. The apple is divided into five different sections, which were gathered together into one envelope. The bloom of the apple has five stigmata to each of these divisions. Each of these stigmata

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must be independently fertilised, or the result is that the fruit becomes defective in formation, and withers prematurely, and drops from the tree. He then produced several imperfectly shaped apples, in each of which some sections were fully developed, whilst others were not properly grown. Upon cutting open the specimens it was discovered that fertilisation had not been effected in the undeveloped sections.

The same remarks applied to a large extent in the case of the strawberry, which required from two to three hundred distinct fertilisations in order to secure a perfectly juicy and ripe fruit. No doubt many had seen a strawberry in which one portion was quite ripe, while another part of it remained green and undeveloped. Here fertilisation has not been complete. The lecturer then exhibited the hive of a wild bee, which he had discovered, and said it had been built on the Stewarton principle, that is, story above story. A small tunnel had been constructed, at the end of which some eggs were deposited; these were covered over with a piece of leaf, and this process had been repeated until there were three or four layers of eggs. It might appear to his hearers difficult to understand how the young bees when hatched could extricate themselves from the layers of the nest which were closed up one above another, especially as the eggs first laid were at the bottom. This was to be explained by the fact that the eggs last laid were always hatched first. Mr Cheshire concluded his observations with some eloquent remarks on the phenomena of nature, and the instruction and pleasure to be derived from the cultivation of bees.

Mr Stewart moved a vote of thanks to the lecturer, which was carried by acclamation.—*British Bee Journal.*

THE CAUSE OF FERTILE WORKERS.

J. B. Mason writes as follows in the American *Bee Journal*:—What apiarist of any note is there who has not been troubled with fertile workers? and which of them can give an absolutely correct solution of their cause? Many theories have been advanced, from time to time, in regard to them, none of which, I apprehend, satisfied their author any more than those who read them. Why, again, is the term "fertile" applied to these egg-laying pests? A "drone-laying queen" is called unfertile, then, why call a "laying worker" fertile when we know it is impossible for it to become fertilized? I trust the term "fertile" will be dropped entirely, and the correct term, viz: "laying worker," will hereafter be used in its stead. Had the bee-keepers in the past, and more especially those who assume to be teachers, been more careful in their choice of terms and statements of results, the science of apiculture would be far in advance of what it now is! It behoves us, then, to use great care in making statements, and avoid the use of ambiguous or double-meaning terms.

The old explanation of the cause of laying workers, or, at least the way in which they derived the power to become such, was that they were reared in the immediate vicinity of queen-cells, and partook of a portion of the royal jelly, in those cells; this idea or explanation is now fully exploded, and bee-keepers to-day are striving to find a correct solution of the problem. It has been stated that they are only found in a colony that had long been queenless; that only one exists in the hive at a time; that one is reverenced as is a queen when present; that colonies containing these "laying workers" cannot be induced to accept a queen; and many other curious, not to say ridiculous statements have been made in regard to them, none of which are susceptible of proof, and many of which show themselves on the face to be errors.

I have given some attention to this matter during the last three or four years, and while I have not discovered the real cause of the presence of laying workers in a colony, I have ascertained that they are present, and actually sometimes deposited eggs in the cells when a fertile prolific queen is in the hive. This I have seen several times. I have also seen several "workers" laying in the same hive, at the same time, with no attention being paid to them by the bees.

If the organs of the laying worker from some cause are partially developed, we should expect to see some change in their form by which they could easily be discovered, but such is not the case; the only way in which they can be found, is by seeing them in the very act of depositing eggs. This I have seen many times, and have found no difference in the appearance of those laying, from any other worker. I have found laying workers in a hive that had not been queenless over twelve days; this laying worker being many days, and doubtless weeks old. This last fact does away entirely with the royal-jelly-eating theory, and is *primâ facie* evidence that any worker has the power, under certain circumstances, to lay drone-producing eggs.

Queens have been reared at a time when no drones occupied the hives, but ere long drones have been found, and the queen has been fertilized by them; at least no other solution could be given for their fertilization, except that they were fertilized by these drones, and no solution could be given of the existence of these drones, except that they came from the eggs of a laying worker.

In the matter of introducing a fertile laying queen to colonies that contain "laying workers," I regard it just as safe as in introducing to a colony that has just had its queen removed; aye, and even safer, as a rule. It is true, that exceptional cases may occur, where a colony having laying workers may refuse to accept of a queen, or even a cell; but does not the same occur at times with colonies that have just had their queens removed?

We must go slow with matters connected with bee-culture; a vast field is open before us from which to glean facts and gain information, and he will prove the most apt scholar who throws prejudice and preconceived notions aside and accepts facts as he sees them. It is very pleasant to start a theory, and then endeavour to bend facts to it, but the better way, and the only one by which truth will be discovered and error rooted out, is to form a theory from well-established facts.

If it is true that some of the new races of bees are particularly prolific with "laying workers," a grand chance now offers itself to make some valuable discoveries in regard to them. Let us all take hold of the work and do "our level best" to find out the truth.

It is a remarkable fact, that the indentations like those with which royal cells containing female larvæ are decked, as if for ornament, are never found on royal cells which contain drone larvæ.

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THE USE OF HONEY AS FOOD.

Dr. W. G. Phelps, in the *Practical Farmer*, gives the following on the use of honey, both as food and medicine :—

In the minds of many persons there exists a prejudice against the ordinary use of honey as a food. We hear it sometimes asserted that honey is an unwholesome sweet inducing colic, dyspepsia and various other disorders of the system. Such assertions are groundless. Honey in its purity is a God-given sweet, and, in its proper use, is conducive to health and strength. Indulged in immoderately, and only then at rare intervals, it may, like many other excellent articles of food, provoke an attack of colic or indigestion. Used, however, frequently, and in connection with other food, it has a tendency to produce pure blood and give tone to the human system. Like all other sweets, it has also a tendency to fatten, and its use is said by medical writers to improve the beauty of the complexion. Sir John More, as early as 1707, was aware of the medicinal and beneficial effects of honey as a food, for he speaks as follows of it :—

"The bee helpeth to cure all of your diseases, and is the best little friend a man has in the world. Honey is of subtle parts, and therefore doth pierce as oil, and easily passeth the parts of the body. It openeth obstructions and cleaneth the heart and lights of those humours that fall from the head ; it purgeth the foulness of the body, cureth phlegmatic matter and sharpeneth the stomach ; it purgeth also those things that hurt the clearness of the eye, breedeth good blood, stirreth up the natural heat, and prolongeth life. It keepeth all things uncorrupt that are put into it, and is a sovereign medicate—both for outward and inward maladies, etc."

Experience with the use of honey in my own family, I believe, fully verifies Sir John's excellent opinion of this delicious substance. The question has been asked me by several of your readers : "Is not the comb taken into the stomach injurious?" I think I can safely answer, no ! In other articles of food we often take into the stomach similar indigestible substances without injury, and often with benefit. Who, for instance, takes the trouble to seed every grape pulp eaten, or stone every cherry ? These indigestible articles pass through the body without in the least injuring it. So with wax, as eaten in moderation, in comb honey. The uses to which honey can be put in cooking and in medicine, indicate it as of prime importance in the economy of life. Used instead of sugar for preserving raspberries and other fruits, I know of nothing its equal, as to many such compounds it imparts a peculiarly delicious flavour. For sore throats, ulcers of the mouth, and many other diseases, honey forms a valuable remedy. To the rare individual for whom the temperate use of honey may produce functional disorders, I would say try heating honey before using it, and see if all such trouble is not remedied. Honey can really no longer be considered one of the mere luxuries of life. For the poor, it has become a cheap and wholesome substitute for the too frequently impure butter. Millions of pounds are to-day consumed by rich and poor alike, when 10 or 15 years since, but a few thousands were used. The severe stab which the manufacturer of the miserable glucose has received is due to a great extent to the production of extracted honey. This being the pure article, and produced even at a profit, for 10 cents per pounds, has virtually gained the mastery in competition with the above falsely so named "cheap sweet." Eat pure honey therefore, so that you may grow strong and handsome, fat and jolly, and—best of all—healthy and wise.

HONEY BEES AND HORTICULTURE.

If some of our fruit-growers were to write upon this subject, they would place as the title—Bees *versus* Horticulture. Some of our ablest entomologists are persuaded that bees do not always play the *rôle* of friends to the pomologist.

What I am to say of bees would apply equally well, in in some cases, to many other sweet-loving insects—as the wild bees, the wasps, and many of the dipterous, or two-winged flies ; only as early in the season other insects are rare, while the honey bees, though less numerous than they are later in the season, are comparatively abundant, even early in the spring months.

My first proposition is, that plants only secrete nectar that they may attract insects. And why this need of insect visits ? It is that they may serve as "marriage priests" in the work of fertilizing the plants. As is well known, many plants, like the willows and the chestnuts, are dicœcious. The male element, the pollen, and the female element, the ovules, are on different plants, and so the plants are absolutely dependent upon insects for fertilization. The pollen attracts the insects to the staminate flowers, while the nectar entitles them to visit the pistillate bloom. Some varieties of the strawberries are so nearly dicœcious that this luscious fruit, of which good old Isaac Walton wrote : "Doubtless God might have made a better fruit than the strawberry, but doubtless God never did," would in case of some varieties be barren except for the kindly ministrations of insects. Other plants are monœcious—that is, stamens and pistils are on the same flower, but the structural peculiarities are such that unless insects were wooed by the coveted nectar, fertilization would be impossible. Many of the plants with irregular flowers, like the Orchids, as Darwin has so admirably shown, are thus entirely dependant upon insects to effect fructification. In many of these plants the structural modifications, which insure fertilization consequent upon the visits of insects, are wonderfully interesting. These have been dwelt upon at length by Darwin, Grey, Beal and others, and I will forbear to discuss them further.

But many of our flowers, which are so arranged that the pollen falls easily upon the sigma, like the clovers, squashes, and fruit blossoms, fail of full fruitage unless, forsooth, some insect bear the pollen of one flower to the pistil of another. As has been repeatedly demonstrated, if our fruit bloom or that of any of our cucurbitaceous plants be screened from insects the yield of seed and fruit will be but very partial. Prof. Beal and our students have tried some very interesting experiments of this kind with the red clover. And all the plants under observation were covered with gauze that the conditions might be uniform. Bumble bees were placed under the screens of half of these plants. The insects commenced at once to visit and sip nectar from the clover blossoms. In the fall the seeds of all the plants where counted, and those from the plants visited by the bumble bees where to those gathered from the plants which were shielded from all insect visits, as 236 : 5. Thus we see why the first crop of red clover is barren of seed, while the second crop, which comes of bloom visited freely by bumble bees, whose long tongues can reach down to the

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nectar at the bottom of the long flower tubes, is prolific of seed. This fact led to the importation of bumble bees from England to New Zealand and Australia two years since. There were no bumble bees in Australia and adjacent islands, and the red clover was found impotent to produce seed. When we have introduced *apis-dorsata* into our American apiaries, or when we have developed *Apis-Americana*, with a tongue like that of Bumbus, seven-sixteenths of an inch long, then we shall be able to raise seed from the first crop of red clover, as the honey bees, unlike the bumble bees, will be numerous enough early in the season to perform the necessary fertilization. Alsyke clover, a hybrid between the white and the red, has shorter flower tubes, which makes it a favourite with our honey bees, and so it gives a full crop of seeds from the early blossoms.

In all these cases we have proof that Nature objects to close interbreeding; and thus, through her laws, the nectar-secreting organs have been evolved, that insects might do the work of cross-fertilization. As in the case of animals, the bi-sexual or diœcious plants have been evolved from the hermaphroditic as a higher type; each sex being independent, more vital force can be expended on the sexual elements, and so the individual is the gainer.

It is sometimes contended by farmers that the visits of bees are detrimental to their crops. I have heard farmers say that they had known bees to destroy entirely their crop of buckwheat by injuring the blossoms. There is no basis of fact for this statement or opinion. Usually bees visit buckwheat bloom freely. If for any reason the seed fail, as from climate, condition, and influence, it occasionally will, the bees are charged with the damage, though their whole work, as shown above, has been beneficial, and that only.

It is true, as I have personally observed, that species of our carpenter bees (*Xylocopa*) do pierce the flower tubes of the wild bergamot, and some of our cultivated flowers, with similar long corolla tubes, that they may gain access to the otherwise inaccessible nectar; the tubes once pierced and our honey bees avail themselves of the opportunity to secure some of the nectar. I have watched long and carefully, but never saw the honey bee making the incisions. As I have never heard of any one else who has seen them, I feel free to say that it is entirely unlikely that they are ever thus engaged.

My last proposition is, that though bees, in the dearth of nectar secretion, will sip the juices from crushed grapes and other similar fruits, they rarely ever, I think never, do so unless Nature, some other insect, or some higher animal, has first broken the skin. I have given to bees crushed grapes from which they would eagerly sip the juices, while other sound grapes on the same stem—even those like the Delaware, with tenderest skin, which were made to replace the bruised ones—were left entirely undisturbed I have even shut bees up in an empty hive with grapes, which latter were safe, even though surrounded by so many hungry mouths. I have tried even a more crucial test, and have stopped the entrance of the hive with grapes, and yet the grapes were uninjured.

In most cases where bees disturb grapes, some bird or wasp has opened the door to such mischief by previously piercing the skin. Occasonally there is a year when an entire vineyard seems to be sucked dry by bees in a few hours. In such cases the fruit is always very ripe, the weather very hot, and the atmosphere very damp; when it is altogether probable that the juice oozes from fine natural pores, and so lures the bees on to this Bacchanalian feast. I have never had an opportunity to prove this to be true, but from numerous reports I think it the solution of those dreaded onslaughts which have so often brought down severe denunciations upon the bees, and as bitter curses upon their owners.—Professor A. J. Cook, in *American Apiculturist*.

BEE FARMING.

We are glad to know that there are gentlemen in different parts of the Australasian Colonies who not only take a deep interest in advanced bee-culture themselves, but who are ever ready to impart the knowledge they possess of this subject to those willing to learn.

The following address on "Bee Farming," as carried out in America, was delivered a short time since by Mr Austral Verge—a subscriber of ours—in New South Wales, under the auspices of the Macleay Agricultural and Horticultural Association, which, no doubt, proved highly interesting to his audience. The address sent us is clipped from the Macleay *Chronicle*:—

"Mr Verge stated that his object in delivering the address was to bring under the notice of the farmers a long neglected though paying industry. And in the course of his address he quoted startling statistics in reference to the profit derived from bee farming. In several instances the profit for one year was £5000 per annum. The hive shown by Mr Verge was invented about 20 years ago, and is called after the inventor, "The Langstroth Hive." Up to the present time it has proved superior to anything invented of late years. The hives are constructed of deal, and made in sections, and so arranged that when the lower hive is filled a second one can be added to the top. Economy seems to be the great factor in the hives shewn. Every hive is fitted with frames about eighteen inches long by seven or eight wide, and to these the bees build their comb. One of these combs when filled holds about eight pounds weight of honey. After the honey has been taken from the comb it is replaced in the hive and can be used over and over again, as it will last for years. When the time taken up in construction of comb is taken into consideration it will be seen what a saving is effected by using hives of the design shown. After explaining the hives, Mr Verge proceeded to show the working of the centrifugal machine used for extracting the honey from the comb; when the comb is filled with honey it is taken from the hive and the capping is cut off, the comb is then placed in the centrifugal machine, and two or three turns are sufficient to extract the honey. The comb is then replaced in the hive, and in the course of seven or eight days will be again full of honey. The machine for extracting the honey is made of tin, and is made to take the honey from three frames at once, in the bottom is a strainer and tap for the purpose of straining the honey after it has been taken from the comb. To save time in the construction of the comb a foundation made of wax, and the exact imitation of natural comb, can be purchased. The foundation is fitted to the hives by securing it with a little melted wax or gum. The process adopted for taking the honey from the bees does away with the liability which exists under the old box-hive system of being stung. In this the apiarist or bee-farmer is provided with an instrument made

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of tin, funnel-shaped, with a small bellows attached. When honey is to be taken a piece of rag is lighted and placed in the bellows, this is then inserted in the entrance to the hive and a volume of smoke blown in, the bees immediately commence to fill themselves with honey and gorge to such an extent as to render themselves harmless. Mr Verge, when illustrating the process of taking honey after blowing smoke into the hives, took some frames containing comb out and brushed the bees off into the hive with his fingers. After explaining the various appliances used, Mr Verge gave a short sketch of the natural history of bees, and mentioned that the queen bee is the only breeding bee in the hive. She is produced from an egg in the worker combs, the cell in which the egg is deposited being enlarged. The queen bee is very shy, and although possessing a very formidable sting, will not attempt to use it on human flesh. One of the most interesting appliances is that used for transporting the queen bee from various parts of the world. It consists of a box about five inches long by three wide and one inch thick, and this is covered on one side with wire netting. Into it is placed sufficient food to last from 60 to 80 days.

After the conclusion of the address Mr A. Humphrey moved a vote of thanks to Mr Verge for his very interesting address, which was seconded by Mr F. J. Buchanan, and carried by acclamation.

"MUSIC HATH CHARMS," &c.—An Alabama paper chronicles the latest story regarding bees. It happened in the country, not far from a pretty village of that State on a bright, sunshiny day, while all the feathered warblers were merrily chirping in the fragrant tree tops in the front garden, and in the parlour the sweet young lady of the house was at the piano, playing a selection from "Satanella," the "Power of Love" most likely. The soul inspiring music was wafted out of the windows and not only to the ears of her lover who was coming up the lane, but also to the ears of the bees, a swarm of which were coming across the sweet scented pasture. Such an attraction had the music on the bees that they entered the window and settled on the piano. Verily music hath charms to sooth the heart of the "savage" bee. We wonder if that young lady left the piano in double quick time when she saw those bees putting in an appearance. We know some young ladies who would if they did, and they would too if they saw a harmless, little mouse.

METEOROLOGICAL OBSERVATIONS FOR THE MONTH ENDING 31st DECEMBER, 1883.

(SUPPLIED BY T. F. CHEESEMAN, ESQ., AUCKLAND.)

THE upper set of figures under the different headings, as will be seen, are the means for the month, the lower set the average of the same month for the previous sixteen years :—

AUCKLAND.

Month.	Barom. corrected (inches.)	Max. Temp. in Shade.	Min. Temp. in Shade.	Mean Temperature.	Solar Radiation.	Minimum Temp. Exposed.	Rainfall in Inches
DEC.	29·92	67·3	56 4	61·8	181 7	50 2	4·33
	29·97			65·1			2·91

Remarks.—From 1st to 11th, showery and unpleasant, with variable winds, mostly from N.W. to S.W.; 12th, fine, with westerly breeze; 13th, 14th, and 15th, overcast and rather drizzly; 16th, N.E. breeze, shifting to S.W. on the morning of the 17th, with heavy rain; 18th and 19th, fine; 20th, heavy showers from S.W.; 21st to 27th, fine, with variable winds; 28th, heavy rain from N.W.; 29th to end of month, fine, but rather cloudy, strong S.W. winds. Weather singularly cold and variable for the month. Barometric pressure slightly below the average of the previous sixteen years; mean temperature considerably below; rainfall largely in excess. Total rainfall for 1883, 55·755 inches, against 45·630 inches for 1882, and being the heaviest rainfall recorded since 1869. The average for the last sixteen years is 44·04 inches.

HONEY MARKETS.

AUCKLAND, February 1st, 1884.

The demand for good honey remains about the same as last month, very little as yet having come into the market. The prices are as follows :- Wholesale, 1lb tins, 8s to 8s 3d per doz.; retail, 1lb tins, 11s to 12s per dozen. Bulk honey, wholesale, 4d per lb; retail, 5d per lb. Extra fine, 6d per lb; in 1lb sections, from 7d to 9d per lb.

AUCKLAND AGRICULTURAL AND MERCANTILE Co., Limited.

ENGLAND.

Prices appear to maintain their former quotations, i.e., 1s per pound for comb honey, and extracted in bulk (imported), 7½d.

From the *British Bee Journal*, for December 1st, 1883, we learn that the value of honey imported into the United Kingdom during the month of October, 1883, amounted to £725.

AMERICA.

NEW YORK, November 22, 1883.

HONEY.—Taking this unusually warm weather into consideration, which undoubtedly conflicts with the sale of honey to a large extent, we have had a good demand for all grades and styles of comb honey. We received some very large shipments during the last two weeks, consequently have a handsome stock, the finest we have ever had on the honey floor, as one of our most practical bee keepers said, who visited us a few days ago. Extracted clover and basswood is also in good demand, and we dispose of large quantities at fair prices. We quote :—

Fancy white clover,	1lb sections,	paper boxes	21@22c
„ „	„	glassed ...	@19c
„ „	2 and 1½lb	„ ...	17@19c
Fair „	1 and 2lb	no glass ...	17@18c
„ „	2 and 1½lb	glassed ...	15@16c
Ext'd basswood or clover, in kegs and bbls ...			9½@10c
„ dark and mixed,	„	„ ...	8@9c
Fancy buckwheat, 1 and 2lb sec's,	no glass...		16@17c

H. K. & F. B. THURBER & Co.

—*Gleanings*, Dec. 1, 1883.

SAN FRANCISCO, December 10.

HONEY.—There has been some attempts at negotiation in comb honey on Eastern account this week. The market for extracted is dull, it is doubtful if more than 7¾c could be realized for choice water-white in a wholesale way. White to extra white comb, 16 to 18c; dark to good, 12 to 14c; extracted, choice to extra white, 7½ to 8c; dark and candied, 6½ to 7c.

BEESWAX.—Saleable at 28c for prime.

STEARNS & SMITH, 423, Front-street.

—*American Bee Journal.*

SPECIAL NOTICES.

QUERY AND REPLY DEPARTMENT.—Correspondence for this department should reach the editor not later than the 15th of each month, when replies are required in the next issue.

ADVERTISING DEPARTMENT.—Advertisements for the next issue should reach the publisher by the 24th of each month.

Correspondence for publication may be sent at book post rates *i.e.*, one penny for every two ounces, providing the book post regulations are complied with, and the words "Press Manuscript" are written on outside of cover.

P.O. Orders for Subscriptions, Advertisements, &c., to be made payable to J. C. Firth, Chief P.O., Auckland, and sent under cover to H. H. Hayr, High-street, Auckland, or P.O. Box 186.

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Per line afterwards ...	0	0	6	Half page... ...	1	7	6
Inch of space	0	3	6	Third of page ...	1	0	0
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CALENDAR—MARCH.

In ordinary seasons the main honey harvest closes about the first or second week in Feb., and very little nectar is gathered until the autumn rains set in, usually near the latter part of the present month. We might almost say that the order of things has this season been reversed, for in most districts the bulk of the honey obtained was not secured till immediately before and after the season should have closed. The result of the extraordinary weather we had in the early and middle part of the season has had the effect of prolonging it beyond its usual limits, as we had anticipated. Bees have done fairly well during the past month, and should the weather prove favourable, we may expect them to gather a considerable amount of honey for the next two or three weeks. In districts where there is a variety of pasturage, including the native bush, we have no doubt that sufficient could be gathered from the present time to more than give the bees a good winter supply; but, in places where clover is the main dependence, bee-keepers should now make sure of having enough honey on hand for winter food. The amount required for this purpose will depend upon the length of time between the seasons in which no honey can be gathered, and this varies in different districts; we have found that from 25lbs. to 35lbs. is the amount usually consumed by ordinary strong colonies, but still it is safe to have a pound or two more in reserve.

As soon as honey is getting scarce, robbing should be carefully guarded against by the methods already given. No pieces of comb containing honey should be left about where bees have access to them, and all honey rooms or receptacles should be kept closed against them. Those who make their own hives, &c., should now get in a stock of timber for next season's use, and stack it in such a manner that it may get thoroughly seasoned and ready for making up during the winter. This is a very important matter, for hives, frames, &c., made of unseasoned timber will always be a source of annoyance to the bee-keeper—by either shrinking, twisting, or the joints becoming loose. Where a large number of hives are kept especially, it is all important that frames and everything should fit

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perfectly, even after years of use; but this will not be the case if unseasoned timber has been used; for, although they may be made to do so at first, after they have been in use a short time it will be found that either the frames are too short, the hive too shallow, or they are not interchangeable with others. Timber to be used for hives, if cut to the order of the apiarist, should not be less than eleven inches wide, to allow for shrinking, and then be reduced to the proper size after seasoning.

MARKETING HONEY.

Next in importance to the production of honey is the style and manner of marketing it. There is nothing that will give the bee-keeper more solid satisfaction, after having raised a crop of honey, than being able to dispose of it to the best advantage. To do this, care and attention is required in preparing it for market; more especially is this the case in the Australasian Colonies, where, generally speaking, markets have to be created for local honey. Formerly the locally-produced article—owing to the manner in which it was secured—was usually in such a filthy state, and so unlike pure honey in flavour and appearance, that it had a strong tendency to destroy what demand there was, and most people came to look upon honey as something not fit to eat, although in its pure state it is one of the most delicious and health-giving articles of food it is possible to obtain. Happily the time has now come when people have the opportunity to obtain pure honey and compare it with the stuff formerly sold under that name; and as we endeavoured to show in our last issue, with that opportunity has come a very large and increasing demand. The old fashion bee-keeper, *i.e.*, he who does not want any of the new-fangled notions, such as movable comb hives, comb-foundation, &c., &c., and who knows enough already (?) without reading bee books or journals, will soon have to stand aside and let his more advanced neighbour come to the front, for the time is rapidly approaching when people of this class will find their produce unsaleable. We know of two or three large apiaries owned by persons of this description, who take every opportunity to ridicule beginners who have adopted at the outset all the modern apiarian appliances. These people can, and will, only be reached through their pockets; they must either keep up with the times or go to the wall. On the contrary, the progressive apiarist will take advantage of every occasion to increase his knowledge in all departments of his business, and so reap the best results from his outlay and labour.

Extracted Honey.—In preparing this kind for market, whether it is capped or not before being extracted, it should always stand in open vessels for some time, to allow all particles of wax and foreign matter to rise to the surface, when it may either be skimmed or the clear honey drawn off from the bottom. Uncapped honey will, of course, require to be exposed longer than capped honey in order to ripen. The longer it is exposed in a warm, dry temperature, the thicker it becomes, till at last it will scarcely run; now, as there is no necessity to let it be exposed so long as this, the bee-keeper would necessarily require some test to ascertain when it is sufficiently ripe to prevent fermentation. The only way we are aware of to do this is to find out its specific gravity, and compare it with some known standard. There are several instruments which may be used for this purpose, but one we have seen mentioned as used for honey is Baum's hydrometer; this, when immersed, will show on a scale the specific gravity of any liquid. The specific gravity for ripe honey—recognised as a standard in England—is 1·261; any honey showing a greater density will be thicker, and we suppose better, but the specific gravity should not be less than the figures given. Now, with an instrument and a recognised standard, the testing of honey becomes a very simple matter indeed, and one that no bee-keeper of any pretensions should neglect.

The next consideration after preparing the honey is to place it upon the market. It will greatly depend upon the situation and means of the bee-keeper who has a large crop of honey to market, as to the best method to adopt for disposing of it. There are two ways open to him, *i.e.*, either to sell it in bulk to dealers, or to tin it at the apiary and dispose of it afterwards through agents or direct to the merchant. By the former plan it is got rid of at once, and the bee-keeper can get immediate returns; but by the latter method a much better price can be obtained. Although we would prefer that the honey should be tinned before leaving the apiary; still, it may be a consideration to the bee-keeper to get returns as early as possible, and in the present unsettled state of the local honey markets, we believe in most cases it would be advisable to sell in bulk; but to those who can afford to lie out of the money for a while, or where the crop is not very large, we would say tin your own honey. One advantage to be gained by this is in not allowing any opportunity for manipulation after it leaves the apiary; we do not mean to say that it is likely to be done here, but we do know that dealers in bulk honey in America have adulterated it to a very large extent before tinning, and so been the means of doing a very great deal of injury to the honey trade.

Those who intend to tin their honey will find it the cheaper way—especially if the tins have to be procured from a distance—to have them sent in the flat, that is, in pieces already cut, and solder them at the apiary. The bodies of the tins could be rolled but not soldered, and still pack one in the other pretty snug, so that nothing but soldering would require to be done on arrival. This could either be done by the apiarist himself, or a tinsmith would do it by contract. The tank from which the honey is to be tinned must, of course, be furnished with a tap, and the best one we know of for the purpose is what is termed a measuring faucet This has a dial and pointer attached to it, and can be set to run out each time the quantity required in each tin, thus saving all trouble of weighing or measuring.

(*To be continued.*)

We wish to call the attention of the editor of the *British Bee Journal*, on behalf of subscribers in Australasia, to the necessity of his giving the English market quotations for honey in each month's issue. At present we have no reliable source from which to obtain them, and naturally look to a representative journal for them.

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ARRIVAL OF HUMBLE BEES AT MATAMATA.

By the s.s. 'Doric,' which arrived in Auckland on the 4th inst., there came a consignment of humble bees shipped by the firm of Neighbour and Sons, Regent-street, London, to the order of J. C. Firth, Esq. These bees, we believe, were procured in Scotland, and were shipped on or about the 13th of December, 1883, reaching Matamata on the 7th of February, 1884. Out of the 100 ordered by Mr Firth, 27 only have as yet been sent. These were packed in various ways in order to test different methods for future guidance. Twenty-four were placed in a shallow tray, which was divided into 24 compartments, each compartment (4in. square) containing one bee, some damp earth and moss, and a little loaf sugar. Over the tray some wire cloth had been tacked, and the tray placed in a double-walled box, the space between the walls being filled with sawdust. Two more bees were placed in earthenware jars amidst damp earth and moss; the jars, although not hermetically sealed, were pretty well air-tight. The other had been put in a small box containing moss, &c. When received on board the vessel at London the packages were at once placed in the cool-room, under charge of one of the officers, where they remained until their arrival in Auckland. With regard to the packing, everything had been done to prevent as far as possible any fluctuation of the temperature of the atmosphere immediately surrounding the bees. Notwithstanding all the precautions that had been taken to ensure their safe arrival, only two out of the twenty-seven were found to be alive when we unpacked them. These, we are glad to say, were in splendid condition, and could fly quite strong a few minutes after they were unpacked. We fed them with a little honey and water, and gave them a fly in our office until next day to recruit their strength, when we liberated them. One we let fly, and the other we placed in a small box in which we put a little earth and moss, and also some honey. This we buried in a sod-bank after boring a hole in the box, leaving an opening in the bank for the exit of the bee. We were advised to try this latter plan by a Scottish friend of ours, who, when a boy, made lots of similar nests for these bees, with which they appeared to be perfectly satisfied, as they continued to occupy them.

Great credit is due to Mr Firth for his perseverance in trying to introduce humble bees into this country, and we are sorry that he has not been rewarded with a greater amount of success; still, if no harm should befall the two now liberated, he will have the pleasure of seeing a large increase of these insects in the course of a few years.

The principal cause of the death of so many of the bees we believe to have been due to the earth and moss in which they were placed being too wet, as everything, including the bees, were quite mouldy when we unpacked the case. The moss in which the live bees were found, although moist, was not nearly so damp as the rest, and the compartments were in a part of the box where there was the most ventilation. The contents of the two jars, including the bees, were (if possible) more mouldy than the others. There was no mould about the small box, as this appeared to have been packed with dry material, and the bee had a fresh appearance as though it had been dead but a very short time. We have been thus particular in giving all details of the packing, &c., so that others, who may contemplate sending for these bees, can take advantage of the experience gained; for we believe that as soon as the best conditions for packing them are known there will not be the slightest difficulty in their reaching New Zealand safely.

Having now gained some experience from this and the former shipment, we believe that the best method for packing would be to place the bees in separate compartments similar to the tray described, surrounded with slightly-dampened moss and covered with wire cloth; the tray to be placed in a double case, the space between the inner and outer case (say 1½ inches) to be packed with sawdust and ventilated just sufficient to prevent the damp moss causing mould; the ventilating holes to be arranged in such a way as to exclude all light from the bees. Probably it would be better to procure the bees from America if possible, as they would reach here in a much shorter time than from England.

We trust that the two bees liberated may live and propagate. Should they become established, there will be a number of queens reared before winter, and these in turn will form nests and breed next summer.

We noticed, in a late issue of the *British Bee Journal*, an advertisement calling for 200 humble bees for New Zealand. We are not aware who they were for, but if sent, we shall be glad to hear in what condition they arrived.

GEOGRAPHICAL DISTRIBUTION OF THE HONEY BEE.

BY T. J. M.

Continued.

With reference to these countries of the "new world" (North and South America and Australia), Dr. Gerstaecker asserts that in none of them were any species of the genus apis to be found until they had been imported from Europe. In North America, where the German bee spread itself with such enormous rapidity when once introduced, some American writers—amongst the rest Von Belknap—in 1792 sought to prove that the insect was a native of that continent; but this has been satisfactorily answered, especially by the American writers, Jefferson and Benj. Smith Barton. The latter, writing in 1793, pointed out the two facts: first, that John Elliot, when translating the Bible into the language of the aborigines, could find no expression in that tongue for either wax or honey; and, secondly, that since the colonization by Europeans the natives always called the bee "the white man's fly." It appears that the German, or black bee, was first imported into Florida in 1763, whence stocks were sent to Kentucky in 1780, and thence to New York in 1793.* In every locality where stocks were transplanted, a rapid increase took place, and a spontaneous spreading of the bees in a wild state in advance of the stream of colonization towards the west. In 1797 the bee showed itself for the first time west of the Mississippi, from which

* Dr. J. P. H. Brown, an eminent American apiarist, in a paper read by him at the National Convention in 1881, says: "The black or German bee was introduced, it is believed, into Pennsylvania from Germany about the year 1627." It certainly appears very probable that Wm. Penn's followers would have endeavoured to introduce bees from England if not from Germany as soon as they began themselves to settle down in their new homes. Nevertheless it is very likely that in the severe winter climate of Pennsylvania and New York the bees would not spontaneously wander far from the human settlements, and that it was only when they got fairly established in the favourable climate of Florida (mean winter temperature above 50 degrees), as mentioned by Dr. Gerstaecker, that they began to spread themselves westwards in advance of civilization.

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point it spread, according to Bradbury, within 14 years to the upper Missouri, 600 miles to the west. The results in the islands of Cuba, where the bee was introduced from Florida in 1764, were very remarkable. Already in 1779 the island exported, accorded to A. Von Humboldt, 81,000 lbs, and in 1803, 1,281,000 lbs. of bees-wax, and in the thirtieth year of the present century the export had increased, according to Ramon de la Sagra, to two million pounds wax and two and a half million pounds of honey.

Into Mexico and Central America generally the bee appears to have been imported at an early period by the Spaniards, and probably spread itself thence to the districts of Venezuela, Peru, and Chili in South America. Direct importation of bees from Europe took place also, but at much later periods, at various places in South America. According to Rheinhardt, the first introduction into Brazil took place in 1845 from Portugal direct, and within five years they were being reared in most parts of Central Brazil, and in 1849 were transported in stocks from Rio Janeiro as far as Rio Grande del Sul. In 1853 a German, Hanneman, imported two stocks of bees direct from Germany to Rio Grande. These two stocks increased in the first year to twenty-eight, and twenty-three of these, which were retained at that place, increased in the second year (between 12th September and 25th March) to 377 swarms.

To Buenos Ayres some stocks are said to have been brought from Chili in 1852; according to Münster, however, a direct importation from Europe to Buenos Ayres took place first in 1858. An experienced farmer and apiarist, Ed. Olivera, living near Buenos Ayres, states that in that year a certain Vinc. Cesares, conveyed several stocks of the northern or German bee in a sailing vessel from the Spanish province of Biscay to Buenos Ayres, and succeeded so well with them that already in the year 1863 there were numerous apiaries in the neighbourhood working with bees derived from that source, one of them with the large number of 400 hives.

In all the cases above mentioned, the bees introduced were of the black or German race, and Dr. Gerstaecker, having examined specimens of the bees then working in Pennsylvania, Mexico, Cuba, and Porto Rico, pronounces them to have retained all their characteristics unaltered. Since the Italian variety, however, came into such favour in Germany, various importations of them into the States have taken place; already, in the year 1855, two stocks of Italian bees were sent to America by Dzierzon, and in 1859 J. Mahan, of Philadelphia, successfully transported five stocks out of Thûringen. In Australia the Italian bee (according to Dr. G.) took the lead of the German one, and was the first to collect honey in that quarter of the globe (?). In September, 1862, four stocks of the *Apis Ligustria* were shipped in England by J. W. Woodbury, and after a voyage of 79 days, arrived safely in Australia. Three of these stocks were kept together after their arrival, and one of them soon bred both queens and drones, so that the race could be extended.

So far I have merely given a condensed translation of the principal points in Dr. Gerstaecker's paper. It may, I think, be taken to be a tolerably accurate statement of all that was known upon the subject treated of up to the period of which it was written. The author, it is to be remembered, wrote as a naturalist, not as a practical apiarist. The results of his investigations in the former capacity are likely to be quite reliable. On the question of the distribution of the bee there is evidently a deficiency of information as regards India and the East Indian islands; and concerning the introduction of the insect into new countries, it is not surprising that twenty years ago there should have been a want of clear information about what was then taking place, or had shortly before occurred in Australia and New Zealand. I shall now endeavour to fill up some of these gaps, at least partially, by means of information obtained from other sources.

(To be continued).

APICULTURE IN QUEENSLAND.

BY. C. FULLWOOD.

I HAVE been much interested with the thoughtful and suggestive papers by T.J.M., and from my experience in a semi-tropical climate, as well as some little experience in England, endorse the ideas he gives us. It is exactly the difficulty we have to contend with, who do not require increase of stocks, but desire rather to secure a good return of surplus honey from a limited number, how to keep down the swarming fever, yet have the stocks strong enough in bees to ensure their storing a sufficient quantity of honey to meet their own and their master's requirements.

I do not think there is any less inclination on the part of the bees here to lay up stores, but there certainly is greater inclination to swarm on the slightest pretext.

The present season has been so far somewhat exceptional. There has been a good ingathering of honey, sheets of foundation have been built out and filled with it in a short time. Queens have been thus confined to comparatively small areas, hence the stocks have not been, as a rule, overflowing with bees, but the rather with honey; the extractor has had to be kept going pretty freely. This continued till the middle of December, when the incoming became less. A larger amount is being gathered now, but there is not at any time that tremendous flow that we read of in some parts of the world, that sends the bees into the sections and supers with a rush that gladdens the bee-keeper's heart.

The early part of the season was exceptionally cold, dry and windy, with an occasional very hot day. During the summer there has been a remarkable absence of thunder storms and rain; we have not had any for months; all round us is parched, hot, and dry. We have had quite a number of excessively hot days, with occasionally a day or two exceptionally cold; high winds have prevailed, more or less. I attribute the manifest indisposition to swarm this season to these facts: drought, extreme changes in the state of the atmosphere, the high winds, and the flow of honey early in the season.

I observed this season that a few of my stocks dwindled considerably—a thing I have never noticed previously in Queensland. My attention was first called to it by a person who has hybrids and blacks informing me his bees were dying off from no perceptible cause whatever. I attempted to discover the cause of such and the small amount of brood-rearing,

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but was unable to do so. My imported queens, once they got a start, have done as well as any.

I have had considerable difficulty in getting queens purely mated, more so than before, and have lost a larger number of young queens than at any previous season; they appear to have been lost away from home.

[Are your nucleus or fertilizing hives a sufficient distance apart to prevent the young queens mistaking them when returning from their wedding trip? as we have always found a greater percentage of losses amongst hives near to each other. Where it is convenient, we believe it is better to have the hives twenty or thirty feet apart. Have you any enemies amongst the feathered tribe?—Ed.]

THE HORTICULTURAL SHOW AND BEES AND HONEY.

L. J. BAGNALL.

The committee of the above Show have intimated their intention to afford an opportunity for showing honey, hives, bees, and such other articles as may be of interest in connection with bee-culture. I am sorry, however, that steps were not taken in sufficient time to have had the list of premiums published with their first list. By this means intending exhibitors would have had more time to prepare. The committee, probably, did not consider that much time was necessary, and intend to issue a supplementary list in which the premiums for bee matters will be announced. I hope bee-keepers will make an effort to have a good display. It is as necessary to educate the public into using honey as it is to produce it, and few ways are so effectual in bringing any article under the notice of the public as shows.

I should like to see the various modes of preparing both comb and extracted honey for market well represented. It is in this department that much has to be learned; it is here that useful, practical knowledge is wanted. What we want to know is how we can best reach the consumer? In many articles of general consumption there is a wide margin between the price received by the producer and that paid by the consumer. This is true of honey to an extent which few are aware of. I notice in the quotations that the producer in some cases gets 4d for what the consumer pays 10d to 1s. The necessity to bring these amounts nearer to each other requires no argument. There is no reason that I can see why the consumer should not get his honey very much cheaper than these figures show, if the producer can get no more for it. The less the consumer pays the more he will be induced to buy.

I do not know whether there will be any convenience to explain and show the manipulating of bees, as is done at American shows. I should like to see something done in this direction, and would not be unwilling to take part in this part of the work. In a previous communication I referred to the suitability of the occasion for starting a bee-keepers' association. I hope this idea will not be lost sight of, and that as many will attend at the Show on the 21st and 22nd March as possible.

Hape Apiary, Thames, 13th Feb., 1884.

[We are also very sorry that so short a notice has been given to bee-keepers of the intention of the Society to include in their schedule a class for bee exhibits, for we are quite certain that had they known this a month or six weeks earlier they would have done their utmost to have made their class the most interesting to the general public of any in the Show. As it is, sufficient time has not been given for the bee-keepers to do justice to themselves, consequently a great number will not exhibit that otherwise would have been glad to have done so. We regret that the secretary of the Society did not answer our letter of enquiry concerning their Autum Show sent him last November; for had he informed us at that time of their intention we would at once have called the attention of bee-keepers to the same through the Journal, and thus given them plenty of time to prepare. However, we are extremely glad that—though the beginning be small—a commencement has been made, and we believe at the next Autumn Show of the Society—if the arrangements are properly carried out—the exhibits in this class will astonish everybody not immediately connected with the bee industry A number of special prizes will be given, and we hope that as many exhibits as possible will be sent, also that as many bee-keepers will be present as can make it convenient, and the opportunity embraced to form a bee-keepers' association.—Ed.]

LIGURIAN BEES.

We notice in a late issue of the Adelaide *Express and Telegraph* that the Chamber of Manufactures of the above city have procured a hive of Ligurian bees and handed them over to the care of a subscriber of ours, Mr A. E. Bonney, "an accomplished and experienced apiarian." Mr Bonney is a gentleman well up in modern apiculture, and we feel sure the bees could not have been placed in better hands. We are very glad to observe that the yellow race of bees are gradually getting distributed throughout all parts of the Australasian Colonies, as we take this to be a sure sign of the progress of bee-culture in this part of the world.

Messrs. Bagnall Bros. & Co. inform us that their 1883-84 circular and price lists have been all disposed of. They also announce in their advertisement that their new season's list is in course of preparation. It will be much larger than the old one, and will contain useful information in making up hives and other matters of interest to bee-keepers and beginners. They have devoted great attention to the manufacture of hives, etc., and inform us that their next season's supplies will, if possible, be better and cheaper than heretofore.

The Baron of Berlepsch notes it as a singular fact, that young queens just beginning to lay, and old queens just recommencing to lay in the spring, not unfrequently deposit drone eggs in worker cells, without subsequently showing any evidence of practical derangment. This exceptional drone-egg laying seems to be merely the result of some transient irregularity.

It is a remarkable fact, that the identations like those with which royal cells containing female larvæ are decked, as if for ornament, are never found on royal cells which contain drone larvæ.

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For the N.Z. and A. Bee Journal.

All correspondence must bear the name and address of the writer, not necessarily for publication, but as a guarantee of good faith.

TEMPORARY WINTER ADDITION TO THE LANGSTROTH HIVE.

Sir,—In the January number of the Journal "T.J.M." expresses the opinion that the German or British system of hanging the frames across the hive, or from side to side, may be better adapted for the colder climate of South New Zealand than the Langstroth system of hanging them from front to rear. I think the latter system is so much the better of the two, that bee-keepers ought to be quite sure that the disadvantage of its being colder cannot be remedied for winter before they make up their minds to adopt the German system, and I would suggest the following method of improving the Langstroth hive for winter by means of a second front: Fix the alighting-board at least two inches below the level of the entrance to the hive. Make of ordinary seven-eights, or so-called inch stuff, two side walls, the width of one end to be one inch, the width of the other end two inches; the length of the rectangular or square side to be the same as the height from the alighting-board to the under side of the cover at the front end of the hive side; the wide end to be cut at such an angle as will fit upon the alighting-board, if the alighting-board is made longer than the width of the hive. Cut a front-wall one, and three-quarter inches wider than the front of the hive, shaped at one end to fit under the hive cover, the other end cut to fit upon the alighting-board one inch from the front batten of the bottom-board; cut in centre of this end an entrance three inches long by three-eights. Nail the front wall to the slanting edges of the two above-described side-pieces, and connect the side-pieces by a batten nailed inside two and a half inches from the bottom end, the batten to be of such a size that it will just touch the front of the hive above the entrance, and act as a roof to the lobby formed when the whole piece is placed upon the front of the hive. The additional or second front is fixed upon the hive by two or three well-greased screws at each side. Greasing the screws enables them to be easily turned when the front is wanted off in the spring. The inner entrance to the hive being two inches higher than the outer entrance, no rain can be driven in, and there is no obstruction to ventilation, whilst the draught of the in-going air is much lessened. If the alighting-board is the same length as the width of the hive, then the side pieces should be an inch longer than above described, and project that distance below the front piece.

Dunoon.

January, 1884.

Sample copies of this Journal sent free to any address on receipt of sixpence in stamps.

EARLY DRONES—EARLY SWARMS.

Sir,—Well, this season I had early drones, but now two of my strongest stocks are killing off the drones. Is not this unusual in New Zealand, Mr Editor? Only one hive out of eight have swarmed up to this date. This brings to mind that with many bee-keepers the prevention of unnecessary swarming is not very easy, except they are old hands at the work, and up to cutting out queen-cells or capturing the old queen, &c.; but if some of your readers will try the plan described below it may prevent their being troubled, "as a rule," with more than one swarm from each hive, and it is well known that every swarm after the first, from any one hive, is much weaker than the first, and often not worth hiving unless two or three more of such swarms are united, and I have always found that strong stocks of bees are the key to success. The plan I would suggest is as follows:—Soon after a swarm has issued from the hive, and are freely entering into the box used for the purpose of hiving it, then remove the *parent hive to a new stand*, and in the place where it stood put the hive that the swarm is to occupy. It is very little trouble, and very rarely will the parent hive send off a second swarm; if it should occur, repeat the process.

J. Newland.

Ngaroto, Nov., 1883.

[We regret that the above letter has been overlooked—it should have appeared in our December issue. The killing of drones in November in this country is certainly very unusual—in fact, we never knew it to occur before during our eleven year's experience. The season has been a most remarkable one throughout, and if we may judge by the past, it is likely to be many years before we again have such another.—Ed.]

BEE-KEEPING IN NEW SOUTH WALES.

Sir,—I have not myself paid any active attention to the pursuit of bee-keeping, having other occupation, but as the natural conditions here appeared so favourable to its development, I thought it might prove a useful auxiliary to persons of small means, and one which, requiring small outlay, they would readily accept. In this latter opinion I confess that I have been considerably disappointed. Wages are so high here, six to eight shillings per day being the lowest price paid for any sort of unskilled labour, that those who are sometimes spoken of as poor men are not under any necessity to trouble themselves very much about how to get their living; their labour is more often unobtainable at those prices. I do not suppose, therefore, that we shall, for some time at least, hear of any one in these parts making bee-keeping his exclusive pursuit; but I feel certain that a more suitable place for the industry could hardly be found. In some parts where the country has been cleared, planting for bee pasture may have to be resorted to; but where the natural vegetation remains as it does in the scrubby, sandy country along the sea coast, there is a succession of bloom quite all the year through. The varieties of eucalyptus alone are all wonderful honey-producers; even in August, our severest winter month, there are at least two kinds of it in full bloom, besides the ti-tree growing in swampy places, which, I should suppose, could hardly be beaten by anything, not excepting bass-wood.

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To provide, however, for a supply of bloom around my own neighbourhood, I have imported from America, among other seeds, those of a white sage, horsemint, sweet clover, figwort, spider-plant, cleome, borage, aslyke and catnip. They have all done well—white sage being seven feet high—except spider-plant and cleome, which I cannot get to germinate.

I am much obliged to you for your answer to my query in the American *Bee Journal*, and also for your offer to receive correspondence from me for the N.Z. AND A. BEE JOURNAL. Whenever I may be able to get together anything worth sending to you concerning the industry I will do so.—I am, &c.,

AUSTRAL VERGE.

East Kempsey, Macleay River, New South Wales.

THE VIRULENT CHARACTER OF THE STINGS OF INDIAN BEES.

SIR,—I send you an account which I received last November from India, which corroborates the statement you gave of the stinging bee of India in the December number of the BEE JOURNAL:—

Coonoor, Madras, Oct., 1883.

I have had a time of great anxiety about my dear husband, who narrowly escaped with his life from bee stings. He appeared at the gate on his pony, almost falling off, and as soon as he reached me he could only gasp out: "Hold my pony—bees," and tottered to the bed. In a moment we saw that he was awfully covered with stings, like pin heads thickly inserted over his entire face, ears, and neck. His face became terribly swollen, he could scarcely see out of his eyes, and was continually violently sick and very faint. The danger from erysipelas was great, and if it once attacked the brain it would be fatal. The sufferer could only lie still, hour after hour, and day after day, without saying a word unless absolutely necessary, and I had to feed him every hour. Gradually, I am most thankful to say, he got better, and is now up and about again, but very weak. We have heard of so many deaths from bee stings. The bees were annoyed by his riding close by (not intending to disturb them) and at once attacked him by thousands, and so virulent is their poison that he began to be sick at once and to have diarrhœa all the way home, the bees pursuing him for a mile on his pony.

ERNEST VOS.

Taupaki, Kaipara Line, Jan., 1884.

THE PRICE OF HONEY.

SIR,—I see you value your honey this year at about the same price as last year. Is this wise policy, seeing that you yourself acknowledge that you could dispose of very much more than you have? If the honey is sold at the price you say, viz., £40 per ton, will there not be next year a temptation to the merchants to offer considerably less on the ground that there is then a glut of honey? It is certainly probable that next year's supply will be much larger than this year's.—Yours, &c.,

UNCLE TOOK.

12th January, 1884.

[We are not aware of having made any statement as to the value of our honey last year. When at the Thames we never sold any wholesale for less than 8d and 9d per lb., but cannot expect to get this price for very large quantities. Honey is usually sold by the ton of 2000 lbs., and £40 per ton would be at the rate of a trifle less than 5d per lb.; now this we consider a very fair price at the apiary for bulk honey in large parcels, and one that will pay exceedingly well in large apiaries. There is nothing to be gained by stating that an article is worth more than what is likely to be obtained for it; like everything else, the price of honey will be regulated by the supply and demand, a fact which our correspondent appears to have overlooked. —ED.]

SWARMING BOX.—A CORRECTION.

SIR,—Honour to whom honour is due. In your reply to Mr Wm. Chas. Brown, *re* swarming-box, you say that his box is similar to "T.J.M." without the movable lid. So far as I can see, it is similar to Mr W. T. Beloe's, with the exception that Mr Brown's has a calico bag attached and no brush, whilst Mr Beloe's has the brush and no calico bag. It is also evident from Mr Brown's letter that he looks upon his box as being similar to Mr Beloe's.—Yours, &c.,

DUNOON.

January, 1884.

[With regard to size, Mr W. C. Brown's box comes nearest to Mr W. T. Beloe's, but in other particulars we think it is more like "T.J.M.'s" To convert Mr Beloe's box into one similar to Mr Brown's, the brush would have to be removed and the calico tacked on, whereas "T.J.M.'s" would only require a movable cover instead of a fixed one. We have not the slightest wish to deprive Mr Beloe of any credit due him for his idea.—ED.]

SCRAPING COMBS.

SIR,—I see by the December number that Mr Karl found he could not extract flax honey. I cannot speak of flax honey, as I have no flax, at least none to speak of, within three miles of my apiary, but I find I cannot extract before the middle of December, the principal flowers the bees work on being the ordinary bush of the country. If Mr Karl, instead of breaking the combs that are built on foundation, will take a sharp-edged spoon and carefully scrape all the cells containing honey off both sides of the foundation and then put it back in the hive, he will find that the bees will work it out again quicker than ever.

F.D.N.

Great Barrier, Feb., 1884.

FROM WESTPORT APIARY.

SIR,—I think there will be very little honey in this district this season. I increased my stock to double the number I started with in the spring, raising my queens in nucleus hives. Had I waited for natural swarming I don't think I would have had many swarms, as the season has been so wet—scarcely a fine day for the past month.

I received a double-comb extractor a few days since, and extracted three combs with it; it does its work in fine style. The January number of JOURNAL came to hand yesterday.

Yours, &c.,

JOSEPH BARKLEY.

Westport, January, 1884.

Mr Rosenman suggests that the disease called foulbrood, may be caused by nitrogen gas generated during the winter in a hive not properly ventilated, and insufficiently protected against cold.

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FROM TARAHERU APIARY.

SIR,—Since my last report, a month ago, the weather has completely changed. It is now something like New Zealand summer weather and very hot. If the bees are to do any good, now is their time, and I must say my strong colonies are doing their best to make up for lost time. Yesterday I extracted 54lbs., and took fifteen 1lb. sections from two swarms hived on 23rd December. Many of the hives are doing equally well, but, on the whole, I am not satisfied with the state of my apiary. When, early in the season, acting on your advice, I doubled up my colonies, reducing them from 75 to 55, it was done in the expectation of an immediate yield from white clover. But as clover yielded no honey, I was practically deprived of 20 hives, which later on would have given a return. Very late and excessive swarming has also done us much harm here. Generally we look for our swarms during October and early in November. When swarming takes place at that time, the parent hive, however much it may be weakened for the time, recovers itself by January, and is in prime condition for the thistle harvest. This was my experience last year with old colonies transferred from box-hives. This season most of the swarming took place in December, and the result is that many hives are weakened, so that little or no surplus will be got from them. This you pointed out to us in the December JOURNAL, and your remedy was to cut out all queen cells and to return any that persisted in swarming. I have practised returning swarms, and in many cases with very good results, but am very doubtful of the wisdom of indiscriminately cutting out cells. I had several cases where cells, if not removed, would have hatched in a day or two. I cut them out, expecting to deter the queen from leaving, but it had no such effect, they swarmed within two days, and I found they had built new cells. Now, if this were a strong colony and able to endure the loss of a swarm, a fortnight or three weeks is lost to them by the removal of a cell that was on the point of hatching. More than this, I find there is a great risk of leaving colonies queenless, and I think it is better to try some other way. Here is what James Hedden says on the subject:—"Some, to prevent after-swarming, cut out the queen cells. I object to this. There is something in nature that hatches the best queens first. Now I will tell you how I manage second swarms. I hive them upon frames of wired foundation, and place the hive containing them by the side of the old colony. As soon as the queen is fertilized and laying, I shake the whole swarm down in front of the old hive and put away the drawn-out foundation for future use. All the bees being the offspring of one queen, they do not quarrel."

I find many hives very reluctant to work in the section boxes. One swarm hived on 30th November filled the lower hive with honey, leaving the queen little or no room to lay, and then swarmed. Some one asked in the *American Bee Journal* which way most honey could be produced by using sections or extracting, and the answer was that if he takes a ripe article out he will get but little more extracted than comb-honey, *provided he thoroughly understands the law governing the production of comb-honey.* This sounds very grand, but does not throw much light on the subject. How do you manage to give your queen room enough to lay and keep them at work in the sections? I settled the business with one swarm that declined to work and swarmed out by throwing them all back on top of the sections? They went to work at once, and are busy on three tiers now; but others I tried on this plan swarmed again next day.

You ask me to explain how I managed to move my bees over a rough road without fastening the frames or killing all the bees. The fact is that my frames fitted the hives so tightly that there was no danger of slipping, and not a single frame moved from its place, nor did I lose a single bee.

My hive of Italians arrived safely on Monday. I removed them from the nucleus to a Langstroth hive, and am gradually building them up by adding hatching brood. It is late in the season to expect to do much in the way of queen-rearing, but I hope to hatch a few before it closes. Are the worker bees accompanying the queen hybrids or pure Italians?

I have not yet seen the January JOURNAL, as my copy is always sent to Ormond instead of Waerengaahike, but from a short paragraph in the *Weekly News* of 5th January, in which it states that Karl Bros. were feeding their bees 2½ bags of sugar a week, I think you have been worse off than us. My bees have at least been able to keep themselves since the middle of October, and I have stored away about 50 well-filled frames of bush honey made in November and December, which I will use for winter stores.

I visited Mr T. U'Renn's apiary the other afternoon and found he had not taken any honey, but by hiving all his swarms he had an immense crush of bees, and expected a good yield in January and February. I rather think that in our district, where our best honey is produced in the late summer, it is advisable to have as much increase as possible in spring. Even second swarms in November with a young queen give good results two months after. If, as apparently is the case with you, your main crop is gathered from white clover in spring, then clearly your plan is to concentrate your forces then and make the most of it; but if, on the other hand, you can depend on a later crop, then it is reasonable to expect that you will get more honey from a hive and its increase—each of the queens having had ample time to hatch a strong force of workers—than if you allowed no increase, but destroyed your young queens and had only the progeny of one queen to gather the honey.

I should like to see some friendly controversy started in the JOURNAL on these points and other details in the management of our bees. And while we look to such contributors as Mr Wilkin and T.J.M. to supply us with scientific articles and practical advice, we, who have not had their experience, would do well to make known our troubles and difficulties, that we may obtain advice and prevent others from falling into the same mistakes.

With the compliments of the season.

GEORGE STEVENSON.

Taraheru Apiary, Poverty Bay, Jan., 1884.

[Our advice, with regard to doubling up the weakest of your colonies, was undoubtedly correct. The probability is that you would have lost most of them if you had not

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done so, as little or no breeding could have taken place during the cold weather that prevailed after you united them from the want of bees to cover the brood. The doubling process should have enabled you to increase your stock more rapidly as soon as there was sufficient honey being gathered to warrant it, and so have more than made up for the loss in uniting.

With regard to cutting out queen cells and returning the swarm, as before stated, no hard and fast rule can be laid down in the management of bees; what will answer one time will, perhaps, not another, under apparently precisely similar conditions. We have practised the method we gave to prevent increase, and found it to answer in the majority of cases. We do not believe in preventing swarming altogether, but there are times when it is advisable to keep it down as much as possible. It is likely you overlooked a queen cell, and in that case it would account for the bees swarming again so quickly. If you refer to the back numbers of your JOURNAL you will there see how we manage to give our queens room for laying while the sections are on. The bees accompanying your queen are principally her own, but there may be a few others.

We are rather surprised to hear that your main honey harvest commences so late in the season. We always thought it came from clover in your district. You have rather an advantage in this, as you have the whole of the spring to get your bees in order and the swarming done; this should enable you to take the full benefit of your main honey harvest while it lasts. We certainly would not like our frames to fit so tight as yours; we like to have them free everywhere, so that we can lift them out of the hive easily when manipulating. As it is, we get a few stings, but with tight frames—well, we would be ready to hand over the job to somebody we didn't care about.—ED.]

FROM KARL BROS.' APIARY.

SIR,—It is nearly 21 years since we arrived in New Zealand, during most of which time we have kept bees, and the present is the worst honey season we have yet experienced.

The only fine honey weather we have had was one week at the commencement of the new year, and unfortunately the flax was in full blossom at the time. The bees stored honey from it in great quantities; we tried our best to extract it, but found it impossible owing to it's being so thick. We then gave them boxes with full sheets of foundation, and as fast as they filled them added others, till now we have a number of colonies filling their fourth and fifth stories. It is quite possible that we may yet be able to extract some honey after the flax is over, as there is plenty of white clover, dandelion, and thistles in blossom, but, of course, it will depend entirely upon the weather. We have seven acres of buckwheat coming into blossom, and five acres sown with mustard, which will be in flower in four or five weeks. We are in hopes of better success during the autumn than we have had through the spring, but at present the weather is very unsettled again.

Ohaupo, January, 1884. KARL BROTHERS.

[On the contrary, we think you are rather fortunate in being able to get an abundance of flax honey in a season like the present one, when the secretion of nectar in other flowers is so very limited.—ED.]

FROM OUR CONTEMPORARIES.

HONEY AS A MEDICINE.

THE *Herald of Health* is high medical sanction. In its issue for Nov., 1872, in answer to a question "Is Honey Wholesome?" it says—"Yes; used in moderation, it is." It then adds: "A German teacher has lately written a work on the subject of honey and its healing properties. While he may over-estimate its value, what he says is interesting. We quote: 'A strong influence for publishing this book was the fact that I, a sufferer from hemorrhages, already given up to despair, and at the verge of the grave, was saved by the wonderful curative powers of honey; and now, thank God, I am freed, not only from weakness of my lungs, but rejoice in the possession of perfect health.

'At my first attack, upwards of thirty years ago, powders and tea were ordered for me, which benefited me but little. I then placed but little confidence in honey, which I had used occasionally, and in small quantities. Judging from my present knowledge, I believe that the honey was the only remedy that was doing me any good, and it is this that I have to thank for the gradual but sure restoration of my health.

'As my disease increased I began to use cod liver oil, which weakened and injured my stomach so that I could hardly digest anything more, and my condition became worse and worse. Again I returned to honey, when my suffering immediately began to decrease and disappear. Besides the use of honey, I took care to preserve my breast and lungs from injury, which, in my trying situation as public teacher, was almost impossible. My disease being caused by my constant teaching during so many years, I gave up my profession, and honey was my only medicine whereby I, by the simplest, safest, quickest, and pleasantest manner (for I was fond of honey), relieved the disease in my throat; and out of thankfulness I now write this book for the use and benefit of many, especially for the use of those suffering from diseases of the throat and lungs.'"

This German teacher is none other than Karl Gatter, from whom we quote still further on the same subject. He says:

"In medicine, and especially in the healing of wounds, was honey, already in early times, used as a universal remedy, it yet constitutes the principal ingredient of many medical preparations, is used with the best results in many internal and external diseases; serves as a means for taking powders, for the preparation of salves and the sweetening of medicine.

"Honey mollifies; promotes festering; causes gentle purging, divides and dissolves, warms, nourishes, stops pains, strengthens the tone of the stomach, carries away all superfluous moisture, aids digestion, thins and purifies the blood, and animates and strengthens the breast, nerves, and lungs. Honey is, therefore, to be used when suffering from a cough, hoarseness, stoppage of the lungs, shortness of breath, and especially with the best results, in all affections of the chest.

"Many persons afflicted with various species of consumption, thank the use of good honey, either for their entire restoration to health, or for the mitigation of their often painful condition of body and mind.

"Honey is also an excellent remedy for the occasional inactivity of the abdominal organs, and a means of

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strengthening weak nerves. For severe coughing, barley-water mixed with honey and the juice of lemons, drank warm, is a pleasant relief. It appeases and mitigates fevers, and owing to its taste and its soothing qualities, it is used as a gargle.

"Honey can also be used with advantage in asthma, in constipation, in sore throat; promotes perspiration, lessens phlegm, and is very healing to the chest, sore from coughing.

"With old persons, the use of honey is very useful, since it produces warmth and a certain activity of the skin. For persons leading a sedentary life, and suffering from costiveness, and especially from piles, pure unadulterated honey, either mixed in their drink, used alone, or on bread, is the best and healthiest means of relief.

"Honey has also great value as a medicine for children, and is readily partaken of by them as a choice dainty dish. It is especially useful to children afflicted with scrofula or rickets. In difficult teething, rub the gums with a mixture of honey and an emulsion of quinces. For the removing of worms, honey has often been beneficially used, and it is often used in diseases of the mouth and throat.

"Honey mixed with flour, and spread on linen or leather is a simple remedy for bringing to head, or to maturity, boils, &c. Also, honey mixed with flour or fried onions, serves an excellent purpose as a covering for any hard swelling or callosity or abscess; and for ulcers it is often mixed with turpentine, tar, and tincture of myrrh. A plaster made of unslacked lime and honey has sometimes relieved most obstinate sciatica.

"If good honey is applied to inflamed wounds or boils, it lessens the drawing, quiets the pain and produces a good festering or suppuration. Undoubtedly, for all wounds, pustulous inflamations, bruises, and bad festerings, honey is the best and most reliable remedy, and affords quicker and safer help than all other known plasters; all that is needed is to spread it rather thick on a piece of linen, place it upon the fresh wound, bind it fast, and renew the plaster every four or five hours. Of course, if bones are broken, surgical aid must be had.

"Honey-dough—*arto mele*—a plaster made out of honey and rye flour or rye bread, into which henbane or other narcotic substances is mixed, is an excellent means of irritation; which should be used in festering and bringing the sore to a head, and assuage the drawing and pain. It should be warmed, spread on a piece of linen, and placed upon the sore part.

"For persons who are weakened through fast living, honey is, of all helps, the best nourishment, since it not only removes the poisons in the system, but also through its virtues strengthens the system; hence it has made itself so necessary to the inhabitants of the Orient."

Honey is beneficial in pectoral diseases, acts as an excellent detergent, and as a gentle laxative. In ancient times the free and regular use of it as an article of diet, was regarded as a means of securing long life; and it thus came to be popularly considered as a specific against disease. Honey is a sedative of no ordinary power. A friend, who is a practising physician, mentions one of his patients, whose habits of observation were seldom equalled, having by the kick of a horse one of his knee-joints badly broken, the pain and anguish being very severe, his daughter offered him some wine or tea. He declined, but said she might give him some honey. Dr. A. remarks: "My own observations justifies the wisdom of his selection. Try it."

Honey is nutritive and laxative, and is employed largely in the preparation of medicine.

In diseases of the bladder and kidneys, honey is an excellent remedy.

An excellent preparation for coughs, especially during feverish or inflamatory attacks, is composed of honey, olive oil, lemon juice and sweet spirits of nitre—each, one fluid ounce—to be taken several times a day, in half fluid-drachm doses.

For Asthma.—Honey is an excellent remedy. Mix 1 oz. of castor oil with four ozs. of honey. Take one table-spoonful, night and morning. A simple and beneficial remedy.

Honey of Squills.—Clarified honey 3 lbs.; tincture of squills 2 lb.; mix well.

Honey Cough Syrup.—This is an excellent remedy for a common cough. One dose will often give relief. Stew half pint of sliced onions and one gill of sweet oil in a covered dish. Then strain and add one gill of good honey; stir it well and cork it up in a bottle. Take a teaspoonful at night before going to bed, or at anytime when the cough is troublesome.

Honey Hellebore.—One pound bruised Hellebore root, four pints water; digest three days; boil, strain, and add two pounds of honey; boil to a syrup.

Balsam of Honey.—Take fine pale honey four ounces; glycerine one ounce; mix by a gentle heat, and when cold add alcohol one ounce; essence of ambergris six drops; citric acid three drachms. This is intended to remove discolorations and freckles, as well as to improve the general appearance of the skin.

Honey of Borax.—Powdered borax, one ounce; clarified honey, one drachm; mix. Astringent, detersive, and cooling; employed in apthæ of the mouth and excessive salivation.

Honey of Mercury.—Quicksilver, three ounces; honey, one drachm; triturate till the globules disappear. Properties similar to mercurial pill.

Honey of Roses.—Dried petals of red rose, four drachms; boiling water, two and half pints; macerate for 6 hours, strain and add honey, five pounds; evaporate in a water-bath to a due consistency. Used to make astringent gargles. Not boil in a copper or iron vessel; they will spoil the colour.

Eye Wash, for sore or inflamed eyes.—One part of honey to five parts of water. Mix, and bathe the lids, putting a few drops into the eye, two or three times a day until well.

Honey Paste.—One cup honey, three-fourths cup white, or yellow wax, one cup lard; melt together, then take it off the fire stir till cool; perfume with rose or violet, and keep in cups, well protected from the air, There is nothing superior to this paste for keeping the hands from chapping; rubbing on a little, after dipping your hands lightly in water. Also softens the hands after hard work.

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DO BEES OR MOTHS FERTILISE THE CLOVER?

As to the fertilisation of the red clover, we were told by Mr Firth's overseer that he believed that part of the fertilisation was due to the action of a brown moth. At our request, he was kind enough to find one of these moths, which we examined very carefully. It is rather a large brown moth, with a peculiar dog-shaped head, from which protrude two very large pea-green eyes, between which is a very pretty feathery crest, whilst a little behind the prominent eyes were two very pretty feathery, fan-like plumes. But the thing which most attracted our notice was a very long ligula or tongue with which the moth was furnished. Under a powerful glass, we observed that the point of the ligula was furnished with a number of very fine hairs—the point, in fact, having the appearance of a small circular brush. After making this examination, the results of which it was impossible to see with the naked eye, we had no doubt whatever that this moth has had something to do with causing the two crops of clover seed which had been previously gathered at Matamata. We were informed that on these two occasions a moth similar to the one referred to was observed to be very abundant, but we do not think that the numerous seed heads we discovered in various directions on the second crop of clover could be wholly due to this moth. A considerable number of these moths were certainly seen flitting about, but an immensely larger number of bees, common and Ligurian, were seen "from early morn to dewy eve," industriously searching petal after petal on the clover blossoms. A careful examination showed that the bees were not visiting the clover blossoms in a perfunctory manner. They stayed on each flower a considerable time, and made vigorous and apparently successful efforts to reach the bottom of the petals. It would be an interesting question, however, to ascertain the exact share of the work of fertilizing the red clover, which is due to the bees and to the moth. We brought two specimens of the moth with us, which have been handed over to Mr Cheeseman, at the Museum.—Auckland *Weekly News*, Feb. 3rd, 1883.

HONEY OVER 100 YEARS OLD.

Among the many curious and interesting relics of the State Historical Society of Iowa, at Iowa City, is an old fashioned bottle containing honey, yet in liquid form, which was brought to this country from France, in 1777, in the medical chest of Dr. Brunot, private physician to Gen. La Fayette, on his first arrival in this country to assist in our revolutionary struggle.

In 1814 Dr. Brunot presented the bottle to Dr. James S. Hepburn, father of Miss Fannie Hepburn, sister of Hon. W. F. Hepburn, who was a candidate for congress at the late election in Iowa. Miss H. presented this interesting relic to the Historical Society in 1874.

"How do you pronounce s-t-i-n-g-y?" Prof. Stearns asked the young gentleman nearest the foot of the class. And the smart boy stood up and said it depended a great deal whether the word applied to a man or a bee.

One pound of honey contains about twenty cubic inches.

HOW TO MAKE HONEY VINEGAR.

Mr. W. J. Hutchinson writes as follows in the *American Bee Journal*:—

At the Michigan State Convention at Kalamazoo, Mr. Bingham had on exhibition an excellent sample of honey vinegar; and, as he told us how many pounds of bees-wax was obtained from a certain amount of washed cappings, it occurred to me that the vinegar was made from the honey that was washed from the cappings. Upon addressing a letter of inquiry to Mr. Bingham, he wrote me a long, kind and instructive letter upon the subject, which, with his permission, I now give to the readers of the *Bee Journal*. It is as follows:

"The cappings should be put into a dripper and allowed to remain about twenty-four hours, then put into as much water as you may reasonably expect to sweeten a little sweeter than good new cider, with the cappings that you expect to have. I fill an ordinary whisky-barrel with water, and the honey from the cappings, in extracting one thousand pounds of honey, usually makes it sweet enough. The cappings are left in the water an hour or two, then skimmed out and put into a strainer to drip dry, which they do in ten or twelve hours. The drippings are, of course, saved and put into the barrel.

"This slightly-sweetened water soon begins to 'work' and the scum may be taken off with a wire cloth, or other skimmer, as often as necessary, until nothing rises. The sweetened water passes through all the stages of fermentation, the same as cider, until it reaches the point called vinegar. One year, perhaps less, makes it such vinegar as you saw at Kalamazoo. We have used no other vinegar in our family for twenty years, except a year or two when we first came to Michigan, fourteen years ago, when I had no bees.

"There is probably no profit in making honey vinegar from good saleable honey, but in keeping bees there is often waste honey that is of little value. I know of no manner of getting cappings ready for making into wax that is so convenient and profitable, and the vinegar is known to be pure.

"I keep the barrel covered with cotton-cloth, and there is not much danger of getting the water too sweet. If very sweet, it takes longer to get it to vinegar; but it is better when it does get there.

"T. F. Bingham."

A barrel of excellent vinegar for every one thousand pounds of honey extracted is certainly worth saving. I know of one bee-keeper who will save that barrel of vinegar during the coming season.

Comb Foundation.—No discovery, if we except the movable frame hive and the extractor, has done so much to advance apiculture as that of comb-foundation. No one should think of doing without foundation in the brood chamber. We advise the use of wired frames. The cells will not be enlarged by sagging, the foundation will not fall from the frames, it will not warp and bend, and the frames of comb will be secure and safe to ship. Good foundation must have very thin bases to the cells, and high walls, the wax of which shall not be much compressed. Such foundation is made by the roller machines. Foundation is also very valuable for sections, for which we would use seven feet to the pound, and only worker size. If one has less than one hundred colonies of bees it will hardly pay him to purchase a mill unless he desires to manufacture foundation to sell.—*Am. Agriculturist.*

Bees think there is no place like comb.

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QUERIES AND REPLIES.

We shall from time to time give replies through this department to questions pertaining to bee-culture, propounded by our subscribers. We would ask our correspondents to be as concise as possible, and to number their questions 1, 2, 3, and so on.

QUERY.—*Stocking Observatory Hive*—The other day I made an observatory hive like the one I saw at the A.A. and P. Association's Show, and following your directions as given in your "Bee Manual," I took one frame of honey and bees out of an ordinary hive and placed it in the observatory, which I put in the window. The first day after it was raining, and the second fine, when I noticed the number of bees getting less; on the third day there were so few left in the hive that I put the remainder with the frame back to its original place. I also noticed a few dead bees, and the glass very much discoloured with their own mess. Should the queen accompany the bees when stocking the observatory hive? An answer through the JOURNAL will oblige. E. L. VOS

Kaipara.

REPLY.—When stocking an observatory hive the queen should always accompany the bees. The proper plan is to look through the hive from which you are going to take the frame, until you find the queen, and if she happens to be on a frame containing sealed brood and plenty of adhering bees, place it at once in the observatory hive, and close the entrance. Should she be on a frame with little or no brood, you could catch her and place her on a suitable one. The entrance to the hive should remain closed for at least 48 hours; by this time the bees have got reconciled to their new quarters, and being accompanied by their queen very few will return to the old home. In a week or so you could remove the queen if you wish to observe the process of queen rearing.—ED]

AUCKLAND GARDENERS' HORTICULTURAL SOCIETY.

WE have to acknowledge receipt of the schedule of prizes of the above Society's Autumn Show, 1884, to be held in the Drill-shed, Auckland, on Friday and Saturday, March 21st and 22nd, 1884. The schedule is divided into three classes, viz.: all-comers, amateurs, and cottagers, and a host of prizes are published for each class, to be given for pot plants, cut flowers, fruits, and vegetables. In addition to the above, there will also be a class devoted to bee-keepers for the exhibition of bees, honey, and apiarian appliances, the prizes and particulars of which will be published one month before the Show. We hope to see as many exhibits as possible in this class, and as many bee-keepers present as can make it convenient to attend. A number of special prizes for all classes will be added to the published list, due notice of which will be given. We should say, judging by the long list of names of influential Auckland citizens, published in the schedule as patrons of the Show, that it will be a great success. A copy of the schedule of prizes may be obtained from the Committee, Mr H. H. Hayr, or the hon. sec. to the Society, Mr O. Smallfield.

NOTICE.—A Meeting of Bee-keepers will be held at the office of MR HAYR, High-street, Auckland, on FRIDAY, 21st March, at 8 p.m. Business—To form a Bee-keepers' Association.

METEOROLOGICAL OBSERVATIONS FOR THE MONTH ENDING 31st JANUARY, 1884.

(SUPPLIED BY T. F. CHEESEMAN, ESQ., AUCKLAND.)
AUCKLAND.

Month.	Barom. corrected (inches.)	Max. Temp. in Shade.	Min. Temp in Shade.	Mean Temperature.	Solar Radiation.	Minimum Temp. Exposed.	Rainfall in Inches
JAN.	29·88	68 0	55 9	61·9	135 2	49 6	1·64
	29·96			67·5			3·03

Remarks.—From 1st to 6th, strong S.W. winds, with occasional slight showers, chiefly at night; 7th to 12th, fine, with variable winds, mostly from W. to S.; 13th to 18th, unsettled and squally, heavy westerly gale on the 16th; 19th and 20th, fine; 21st and 22nd, S W. breeze, with slight showers; 23rd to 27th, fine, with variable winds; 28th to end of month, unsettled, showers on 28th and 30th, and morning of 29th. Weather on the whole singularly cold and variable. Barometer pressure below the average; mean temperature considerably under the average, and the lowest yet recorded for the month of January; rainfall comparatively small, although spread over more than the usual number of days.

HONEY MARKETS.

AUCKLAND, March 1st, 1884.

The demand for good honey remains about the same as last month, very little as yet having come into the market. The prices are as follows:—Wholesale, 1lb tins. 8s to 8s 3d per doz.; retail, 1lb tins, 11s to 12s per dozen. Bulk honey, wholesale, 4d per lb; retail, 5d per lb. Extra fine, 6d per lb; in 1lb sections, from 7d to 9d per lb.

AUCKLAND AGRICULTURAL AND MERCANTILE CO., Limited.

ENGLAND.

There appears to be no alteration in prices since our last quotations; our latest advices are dated 15th December, 1883.

AMERICA.

NEW YORK, January 4th, 1884.

HONEY.—White clover and basswood in 1lb and 2lb sections, 17@22c; dark, and second quality, 14@15c; extracted white clover, in kegs and barrels, 9½@10c; dark 8@9c.
BEESWAX.—Prime yellow, 27@29c.

H. K. & F. B. THURBER & CO.

SAN FRANCISCO, January 4th, 1884.

HONEY.—Fancy comb is scarce. and prices for the same are firm, but offerings of other descriptions receive little or no attention. White to extra white comb, 15@20c; dark to good, 9@11c; extracted, choice to extra white, 6@7½c; dark and candid, 5c.
BEESWAX.—Wholesale, 27½@30c.

STEARNS & SMITH, 423, Front-street.

—*American Bee Journal.*

SPECIAL NOTICES.

QUERY AND REPLY DEPARTMENT.—Correspondence for this department should reach the editor not later than the 15th of each month, when replies are required in the next issue.

ADVERTISING DEPARTMENT.—Advertisements for the next issue should reach the publisher by the 24th of each month.

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THE NEW ZEALAND AND AUSTRALIAN

BEE JOURNAL.

Devoted exclusively to Advanced Bee Culture.

VOL. I. No. 10.} AUCKLAND, N.Z., APRIL, 1884. {Published Monthly, Price Sixpence.

THE NEW ZEALAND AND AUSTRALIAN
BEE JOURNAL

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I. HOPKINS.....Editor.

H. H. HAYR.....Business Manager and Publisher.

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CALENDAR—APRIL.

THE fine weather that prevailed during the month just past enabled the bees to gather a nice bit of honey from thistles and other plants that in ordinary seasons would have been out of blossom. Although the days were bright and warm, the nights were excessively cold, and interfered very much with the secretion of honey. Most, if not all, the nectar gathered from spider plant is secreted at night, and the bees—as a rule—will be found visiting the blossoms by the first peep of day; but, owing to the temperature being so low after sunset, there has been little or no secretion taking place, consequently our plants have been quite deserted by the bees—a very unusual thing with cleome pungens. On several occasions, here at Matamata, during the past month, the thermometer has registered several degrees below 40, and twice during the month was as low as 34deg; in fact, we have not had what could be fairly termed a warm night at any time during the season.

The honey season in most districts may now be said to have closed, although sufficient may be gathered during the next two or three weeks to serve the bees for food during that time, and so avoid the necessity of consuming the stores already gathered. Breeding is now rapidly diminishing, and, with very few exceptions, all drones have been exterminated. It is not prudent to allow breeding to diminish too rapidly, or to end too soon in the autumn, as the result of this would be a weak colony to start with in the spring. We like to see breeding going on in a small way to near the end of May, so that we may be sure of having plenty of vigorous bees in the colony at the commencement of the following season. If they are too old they are not strong enough to stand the boisterous weather of early spring, and the consequence is they die off rapidly, and leave the colony very weak before others can be hatched to take their places. This, we think, is one of the principal causes of "spring dwindling."

ROBBING.—In our last Calendar we incidentally touched upon robbing. As this is a matter of great importance, requiring particular attention at this time of the year, we again draw the attention of our

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readers to it. Of all times of the year that robbing is most likely to be started, the first five or six weeks after the close of the honey season is the worst. Bees are undoubtedly more vicious at this than any other time, and appear ready to fight on the slightest pretext. In removing surplus honey, or opening hives for any purpose, the operation should be got through as speedily as possible, and the cover put on again so as to give no opportunity for robbers to get in. Not the slightest piece of comb containing honey should be left within reach of the bees, or they will find it very quickly. Queenless colonies, if any, should either have a fertile queen given to them or be at once united with others having fertile queens. Should a weak colony be attacked by robbers, a cloth, or whisp of straw or hay, laid across the entrance to the hive, and water poured on this from a watering pot, will generally frighten the robbers away; but the hive must be watched for some little time, and the watering repeated if they should again make their appearance.

Surplus honey may now be all removed from the hives, taking care to leave sufficient winter stores for the bees. Spare combs should be stowed away in a place secure from the bee moth, and all refuse comb and pieces of wax melted up and cleaned ready for sale. Spare hives, frames, and everything not required for use, may now be cleaned and carefully put away, where they can remain till required again. Before putting the hives, frames, and combs away, we would strongly recommend our readers to adopt the preventitive measures against foul-brood given in another column. It will cost but little time and trouble, and may be the means of preventing loss and vexation.

IMPORTED ITALIAN QUEENS.

We would remind those of our customers who are desirous of obtaining imported Italian Queens to send in their orders, accompanied by cash, during the present month. Should we be unable through loss in transit, or other circumstances, to supply orders, the cash will be returned in full. Price of queens, £2. We shall arrange for them to arrive here in October next. For further particulars see February number of the Journal.

MOTHS AND RED CLOVER.

Amongst the various kinds of moths there is one commonly known as the silver Y moth (*plusia gamma*), which in England appears to be one of the principal agents in fertilizing the red clover blossoms. It has been supposed by some that the moth we have in New Zealand, which may be seen flitting about the red clover at this time of the year, is identically the same. As we were anxious to know, we sent a specimen to Mr J. L. Shadwell, an amateur entomologist, who replies as follows:—

Sir,—I have received the moth you kindly sent me from Matamata. It is not the silver Y moth *(plusia gamma)*, but a specimen of *dipsacea*—the marbled clover moth—considered a very rare insect in England, being found only in a few places in Norfolk, Suffolk, and Cambridgeshire. *Dipsacea* is usually found amongst red clover and teasel, so I should think it quite likely to have taken a part in fertilizing the red clover at Matamata.—Yours, &c., J. L. Shadwell.

Northcote Apiary, Auckland, March, 1884.

MARKETING HONEY.

(continued.)

Honey in glass jars looks remarkably tempting, and would be preferred by many, but, unfortunately, there are two serious drawbacks to this kind of package. The first is, glass vessels are very expensive as compared with tin; and the next—perhaps the greatest—is, that after the honey granulates, which it is sure to do in time, it has anything but a tempting appearance to the inexperienced consumer, who, on seeing it through the glass, would be pretty sure to say that it had been adulterated, although granulation is one of the surest tests of the purity of honey. Some kinds of honey will granulate much quicker than others. We remember having some on hand about five years ago that, although in an open jar for over twelve months, remained in a liquid state the whole of the time. Clover honey we find granulates as soon as cold weather comes on. We have not tried the experiment of heating honey to prevent granulation on a sufficiently large scale to warrant us recommending the process authoritatively, but from the little we have tried good results have been obtained. If this is practised great care must be taken that the honey is not heated to too high a temperature, as it would have the effect of both darkening the colour and destroying the flavour of it. Any bee-keeper wishing to adopt this method when glassing honey could have a cheap and simple water bath fitted up as follows:—Procure a shallow pan, say 9 or 10in. deep, and as large as convenient for standing in an ordinary fireplace, or over a stove arranged on purpose; one inch from the bottom put in a perforated false bottom, or what would be perhaps better, have a perforated movable tray made to take out or put in. This false bottom or tray is to stand the glass jars on to prevent them breaking, as they would be apt to do if standing on the bottom. When required to use, place the pan on the fire with a little water in it, now place the unstoppered jars—after being filled with honey—on the tray and fill up with water sufficient to nearly cover the honey, and heat the water till the temperature is about 170deg., after allowing it to remain awhile at this, stopper the jars and remove them, taking care that the jars are made airtight. If this process will answer in keeping the honey in a liquid state, and we have little doubt about it, it will remove one great objection to glassing honey.

Our next consideration is the labels. The importance of having a neat and attractive label cannot be over estimated, the sale of many a good article is marred through the shabbiness of its outward appearance In placing a new brand of any article upon the market it should be made as attractive as possible, so that it will catch the eye of the general public; in this way only can we expect to get the article introduced quickly. Tradesmen, too, will give an engaging-looking article a more prominent position in his window and shop, which materially helps the quick sale of it.

Very fine lithographed labels can now be obtained, of any design, and in any number of colours and fancy lettering, at most of the leading printing establishments throughout the colonies, at a very reasonable rate, obtainable on application. The first labels we had lithographed were very fine ones, but small, only occupying a portion of the surface of the body of the

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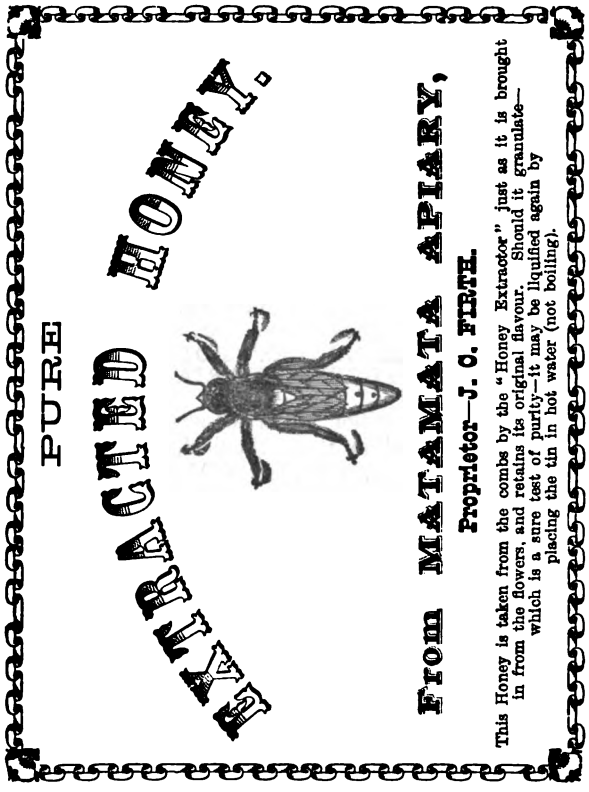
tin; this we soon found to be a mistake, as it necessitated japanning the whole of the tin. Labels should be large enough to encompass the whole body leaving only the top and bottom to japan. The design of the label may be made to suit the taste, but it is as well to have some distinguishing mark in front to answer as a sort of trade mark, such as a hive, queen, or extractor, and as it is necessary that the consumer should know how to liquify the honey again after it becomes granulated, this should be explained on the label. The following sketch will give beginners some idea of what is required:—


EXTRACTED HONEY.
PURE
From MATAMATA APIARY,
Proprietor—J. C. FITH.
This Honey is taken from the combs by the "Honey Extractor" just as it is brought in from the flowers, and retains its original flavour. Should it granulate—which is a sure test of purity—it may be liquified again by placing the tin in hot water (not boiling).

Of course we have only given a rough idea of a label in the above, although the principal points are shown. Previous to sticking on the labels—which would be already gummed when received from the printers—the tops and bottoms of the tins should be japanned to prevent them rusting. Japan can be bought of any oil and colourman, and should be thinned down with turpentine to the proper consistency before being used. After the tins are labelled it would be better to wrap each in thin tissue paper to preserve and keep the labels clean. The material for packing cases can be procured, cut to any dimensions, from any of the sawmills; these, of course, would be put together at the apiary. A very convenient sized case is one that will hold 2 doz. 2lb tins, or double the quantity of 1lbs; with the kind of 2lb tins we have on hand, a case measuring 15in. x 18in. x 7½in. would pack the above number, but it would be better to take the dimensions of the tins before ordering the cases, as all tins do not measure alike. A stencil plate is required for marking the name of apiary, proprietor, and weight of honey on each case; and also some show cards for sending with each consignment, for a little money spent in bringing the article prominently before consumers is well spent. We may mention here that labels for glass jars will only require to cover a very small portion of the glass and should be cut to fit nicely.

We lately received a letter from a correspondent who informed us that he was putting the bulk of his honey (about one ton) in 60lb tins, two of which are packed in each case; both tins and cases are obtained from a distance, and the expence altogether with freight to Auckland will amount to about 1d. per lb.

(To be continued).

FOUL BROOD.

From different quarters we hear of the existence of that dreaded scourge, foul brood. We are inclined to think with Professor Cook that this disease arises from more causes than bee-keepers are at present aware of. There is, however, one thing certain, that is: when once started it is easily propagated, and spreads very rapidly. Our knowledge of the disease at present appears to be very imperfect, but, no doubt, in time some one of the many persons experimenting with it will discover the exact nature of the disease, when a knowledge of the causes and effectual cure are almost sure to follow. In the meantime, the salicylic acid remedy is the only one known, a mixture of which acid every bee-keeper should have at hand, ready for use on the first appearance of the slightest symptoms of foul brood. The appearance of the disease, and the method of applying the acid, are now given in detail in all modern works on bee-culture, and has already been published in the Journal, so that there is no need to go into the matter here. Our object at present is to point out measures which should be adopted in every apiary as a preventitive against the disease, and to show how it may best be kept from spreading when once introduced.

Since we have learned how easily the germs of foul brood may be introduced into an apiary if the disease exists anywhere in the neighbourhood, and that salicylic acid solution will kill these germs, we have often thought that if a little of this solution could always be present in the hive it would be the best preventitive against its introduction. As the germs of the disease appears to be a minute fungoid growth, and capable of being carried on the feet of a bee, it would be necessary that the solution should be spread over the whole interior of the hive, including the frames and combs. And not only this, but it should be present in the honey as well, and here is where the difficulty comes in, for the germs are said to live in the honey, although dormant until they are introduced into cells containing larvæ, when the effects of the disease are soon made apparent. It appears practically impossible to get the solution mixed with the honey, as it is stored in the cells by the bees; of course, when feeding them, it could be mixed with their food, and this should always be done. Although we cannot always get the acid solution mixed with the honey, we can do the next best thing, that is: thoroughly disinfect the cells before the honey is stored in them. If this were done with all spare combs and hives before being stowed

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away, there would be little risk of these being the means of spreading the disease.

Mr Thos. Wm. Cowan, in his admirable little work—*The British Bee-keepers' Guide Book*—has recommended the following precautionary measures to be taken:—"All hives, floor-boards, and frames that have been in use should be scalded and thoroughly cleansed before they are used again. The winter is a convenient time for doing this, so that they may be ready for work again in the spring. In addition, they should be washed all over with salicylic acid solution, of which the recipe No. 1, is given under the head of "Recipes." This will prevent the propagation of foul brood by destroying any germs of the disease which may be present. All empty combs, which have been put away, should also be sprayed with this solution before they are used again. The solution is inexpensive, and the prudent bee-keeper will be well repaid for the simple precautions he may take to prevent the introduction of foul brood into his apiary. In any case precaution is better than cure."

RECIPES.

No. 1.—Salicylic Acid Solution, for mixing with syrup for feeding bees, painting over hives, and spraying combs, &c., for prevention and cure of foul brood:—

Salicylic Acid	1 oz.
Soda Borax...	1 oz.
Water	4 pints

No. 2.—Spring and Summer Food for bees:—

White Lump Sugar	10lbs.
Water	7 pints
Vinegar	1 oz.
Salicylic Acid Solution No. 1	1 oz.
Salt	1 oz.

Boil for a few minutes.

No. 3.—Autumn Food for bees:—

White Lump Sugar	10lbs.
Water	5 pints
Vinegar	1 oz.
Salicylic Acid Solution No. 1 ..	1 oz.
Salt	½ oz.

Boil for a few minutes.

Every bee-keeper with a clean apiary should adopt some precautions to prevent the introduction of the disease, and we know of none more simple and likely to be more efficacious than those now given.

Foul brood, its cause and cure, is a matter that might well be taken up and inquired into by our newly-formed "Bee-keepers' Association." The opportunity is open to anyone who could throw any fresh light upon the question of not only making a name for himself, but of doing a world-wide good.

OUR FUMIGATING ROOM.

We have been asked to give a description of a fumigating room, together with the internal fittings; perhaps the best thing we can do is to give a description of our own, as we find it answer admirably.

Our workshop is 34ft. long, with 10ft. studs; against the back of this is built a lean-to 10ft. wide and the length of the shop. There is a drop from the floor of the workshop to the floor of the lean-to of about 10in., which allows of that much more pitch in the roof, the back studs being 8ft. At one end of the lean-to is the office, 8ft. x 10ft.; at the other end a comb-honey room, 12ft. x 10ft.; leaving the centre compartment 14ft. x 10ft. This is the fumigating room. The whole of the lean-to, including partitions and roof, is close lined with tongued and grooved lining, making the different compartments as nearly smoke tight as possible. In the centre of the partition, between the honey and fumigating rooms, is a door leading from one room to the other, and a window in the centre of the back of the fumigating room. A passage is left down the centre of the room, from the door, 3ft. 6in. wide; and on each side of this passage, 2in. x 3in. scantling are nailed in an upright position from floor to ceiling, 20in. apart; the narrow edge of the scantling towards the passage. On each side of the scantlings, 3in. x 1in. battens are nailed in a horizontal position to carry the frames. These are nailed a sufficient distance above each other to allow a space of about 1½in. between each tier of frames. The space on the side of the window and immediately opposite it is unoccupied, so as not to block out the light. When we are stowing away our spare combs, they are carried into this room and hung on the battens exactly like they hang in the hives, the battens answering as rabbets. The combs are kept about an inch or so apart. As soon as we detect the slightest sign of the bee moth, we fumigate the room in the usual way. This sized room has a capacity for storing about 2500 combs.

AUCKLAND GARDENERS' HORTICULTURAL SOCIETY'S SHOW.—APIARIAN CLASS.

The Autumn Exhibition under the auspices of the above Society, was opened in the Drill-shed, Wellesley-street, Auckland, on Friday, the 21st of March, and was continued during the following day. Unfortunately the unfavourable weather interfered materially with the attendance on the opening day. During the latter part of the morning and the whole of the afternoon, the rain fell in torrents and made it very unpleasant for visitors. The Show, as a whole, was—we believe—the best that has ever been held in Auckland. The exhibits, including fruit, flowers, and vegetables, was simply magnificent, and would have done credit to a much older colony than New Zealand; but as we are mainly interested in the Bee and Honey class, we shall confine ourselves to the apiarian exhibits.

Until about a week or so before the Show, we were very doubtful as to whether there would be a sufficient number of exhibits in the apiarian class to fairly represent the honey industry of the Auckland Province, owing to the very short notice that had been given to bee-keepers to prepare their exhibits; but after receipt of several letters and telegrams from some of the more prominent apiarists, stating that they would be present, and also intended to exhibit, our doubts were dispersed, and it was with a considerable amount of pleasurable anticipation of meeting these gentlemen that we started for Auckland. Shortly after arrival we learned from Mr H. H. Hayr that a very fair number of exhibits had arrived, and that, as far as the bee class was concerned, it was likely to be a great success. Amongst those we had the pleasure of meeting at the Show, and who are known through the Journal to most of our readers, were Messrs. Bagnall, sen., and Mr L. J. Bagnall (of Bagnall Bros.), Mr T. J. Mulvany, Katikati; Mr J. Newland, Ngaroto; Dr. Dalziel and Messrs. Beloe and Brown, Pukekohe; Capt. E. D. H. Daly, Hautapu; Messrs. Shadwell and Robinson, Northcote; J. Collins, Taukau; besides a large numbers of others.

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Great credit is due to the Horticultural Society for the arrangements made to display the apiarian exhibits and bee manipulations. The stage devoted to the exhibits occupied one end of the shed, about 50 feet in length; this was fully taken up without undue crowding. In the centre of the stage was a very fine glass show case, about 4 feet square, containing Mr L. J. Bagnall's exhibit of comb honey, on the top of which was placed extracted honey in glass jars, surrounded by very neatly got-up tins of the same article. The exhibits of comb honey in 1lb sections, by Messrs Stevenson, Bagnall, Collins, and Beloe, were very good, indeed. Extracted honey was also well represented by Messrs. Mulvany, Stevenson, Blair, Blackwell, Capt. Daly, and the Auckland Agricultural and Mercantile Company. Messrs. Bagnall Bros. and Co., and Messrs. Shadwell and Robinson had a very fine display of apiarian appliances, Messrs. Bagnall Bros. and Co. being the most extensive—every modern appliance being shown. A novelty in comb-foundation was exhibited by Messrs. Shadwell and Robinson, viz., wooden based foundation. This consists of a very thin board, covered with a slight coating of wax on each side, on which the impressions of flat-bottomed cells are stamped. Messrs. S. and R. made one or two sheets as an experiment, and have presented us with one for trial. As it is now too late to test it this season, we shall do so next, and report the results through the JOURNAL. Comb-foundation of different makes, and wax, was well represented by Messrs. Blair, Shadwell and Robinson, and Hopkins. Altogether, the display—although not so large as we hope to see it in future years—reflected great credit on the exhibitors, and was, without doubt, the best of its kind that ever took place in the Australasian Colonies. Outside, at the rear of the building, a bee manipulating tent had been improvised by enclosing a space of about 12 feet square with mosquito netting; outside this a wall of calico 8ft. high was erected, leaving a passage 8ft. wide, in which the spectators could stand to view the manipulations going on inside the mosquito netting, without in any way being interfered with by the bees. Two three-framed observatory hives, the property of Messrs. Bagnall and Hopkins, were located in the enclosure, the one belonging to Mr Hopkins being stocked with Ligurian bees, and the other with hybrids. The inmates were at work in the usual manner and created a large amount of interest amongst the visitors to the Show. It had been arranged that we should give an exhibition of driving and transferring on the opening day, but owing to the heavy rain, we had to postpone it until the following one, in the hope that better weather would prevail.

The second day continued fine throughout, and brought a large number of visitors to the Show At 2.30 p.m. we went through the operation of driving and transferring the bees from a common box to a bar-framed hive, assisted by Mr L. J. Bagnall, at the same time explaining various details to the onlookers. At 4 p.m. we transferred the second box hive and amalgamated the bees, &c., with the first lot. The spectators were evidently very much astonished to see bees handled in such a manner, many of whom previously thought that it was impossible to take up large handfuls of bees without being severely stung. There can be no doubt that such exhibitions as these will do a vast amount of good to the bee industry, and tend to popularise bee-keeping amongst the masses. We cannot conclude without calling attention to the indefatigable exertions of our Class Steward, Mr H. H. Hayr; to him, in a great measure, is due the success of the apiary department of the show. That it was a complete success was testified by the great amount of interest taken in the various exhibits by the visitors. Mr Hayr took charge of all exhibits sent, and saw that they were placed to the best advantage; and, after the show, disposed of all the honey, &c., at very satisfactory prices. The following is the list of prizes awarded:—

Messrs I. Hopkins and T. J. Mulvany, Judges.

J. C. Firth, Esq., on behalf of NEW ZEALAND AND AUSTRALIAN BEE JOURNAL—For the best and neatest got-up Tins of Extracted Honey, ready for market. Tins to be either 1lb or 2lb or both; not less than ten tins. Prize, £1 1s—Awarded to Bagnall Bros., on behalf of the Auckland Agricultural and Mercantile Company.

For the best and most attractive method of preparing Comb-honey for market. Packages to contain not less than 24lbs in 1lb sections. Prize, £1 1s—Awarded to Mr Collins.

Mr I. Hopkins, Editor NEW ZEALAND AND AUSTRALIAN BEE JOURNAL—For the best and most suitable Package for the Carriage of Comb-honey without damage; the package to carry not less than 24 1lb sections. Prize, 10s—Awarded to Mr Collins; certificate of merit, Mr L. J. Bagnall.

For the best sample of Extracted Honey, not less than 20lbs. Prize, 10s—Awarded to E. D. H. Daly; certificate of merit, Mr Stephenson.

Messrs Bagnall Brothers and Co.—For the best collection of Honey for market, the produce of one apiary. Prize, £1—Awarded to Messrs Mulvany and Son.

Mr H. H. Hayr, Publisher NEW ZEALAND AND AUSTRALIAN BEE JOURNAL—For the best Observatory Hive stocked with bees and queens at work; if possible, combs to be visible on both sides. Prize, 10s—Awarded to Mr Hopkins; certificate of merit, Bagnall Brothers.

For the best sample of Comb Honey, in 1lb sections, not less than 20lbs. Prize, 10s.—Awarded to Mr Stevenson.

Auckland Gardeners' Horticultural Society—Best Collection of Apiarian Appliances. Prize, Society's Silver Medal, £2 2s.—Awarded to Bagnall Bros.

Best sample of Artificial Comb-foundation, for brood frames, not less than 5lbs. Prize, 10s.—Awarded to Mr Hopkins; certificate of merit, H. B. Morton.

Best sample of Artificial Comb-foundation for sections, not less than 2lbs. Prize, 10s.—Awarded to Mr Hopkins; certificate of merit, H. B. Morton.

Best sample of Beeswax, not less than 10lbs. Prize, 10s.—Awarded to Shadwell and Robinson; certificate of merit, Mr Hopkins.

Best Movable Comb Hive, with arrangements for surplus honey. Prize, 10s.—Awarded to Bagnall Brothers.

Mr Greenshield's prize for honey in glass—a pair of silk suspenders, worth, we believe, 30s.—was awarded to Messrs Mulvany and Son.

WE wish to draw the attention of our readers to the supplement issued with this number of the JOURNAL. As will be seen, it is proposed to form a Bee-keepers' Association that shall occupy the same position in this colony that the British Bee-keepers' Association does in Great Britain. There cannot be a question as to the good that such an association will do to the bee-keeping industry, and we trust that all our subscribers will become members.

Subscribers will please notice the stamp on back of wrapper, and see that the date corresponds with the period for which their subscription has been paid, and accept this as a receipt.

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TEST FOR PURITY OF BEESWAX.

We are very glad to be able to give our readers a reprint of a very simple method for testing the purity of beeswax, so that every bee-keeper may have it in his power to find out for himself whether he is being imposed upon by the sale of adulterated comb-foundation.

Messrs Dadant and Sons write as follows in the *American Bee Journal* of February 6th, 1884:—

Friend Newman,—We have just hit upon a very easy plan for testing the purity of wax, and will give it to you: Dilute water and alcohol in a vial about ¾ water and ¼ alcohol. Then take a small piece of wax which you know to be pure (you or any beekeeper can easily find such), put it in the vial and add alcohol slowly until your mixture is of the same specific weight as the wax. Then the wax will go to the bottom very slowly. Your testing apparatus is now ready. If you have wax with tallow or paraffin, and put it in the mixture, it will remain at the top, its specific gravity being less than that of the mixture. If it contains rosin, on the other hand, it will go to the bottom quickly, being heavier than the mixture.

In testing, you should take care that the sample contains no air, as this would change its specific weight. In testing foundation, therefore, the sample should be throughly melted before testing, so as to exclude all air from the inside of the sample.

This test is cheap and conclusive. There may be a small difference from one sample of wax to another, but it is not so as to exclude the clear discovery of paraffin or tallow, which are the worst enemies we have, for purity of wax. We have tested one or two samples which we suspected, and they floated in a manner that proved their impure origin clearly.

As this may be of use to bee-keepers at large, we authorize you to publish the above entirely in the columns of the *Bee Journal*, and will be glad if it can be of service in preventing the sale of adulterated wax.

Hamilton, Ill.

GEOGRAPHICAL DISTRIBUTION OF THE HONEY BEE.

BY T. J. M.

Conclusion.

India is only incidentally mentioned by Dr Gerstaecker in his treatise, and that in a way which leads one to suppose that the true honey bee had never penetrated from Central Asia beyond the ranges of the Himalayas into the plains of India, and that any bees existing in that country must be of different species. Speaking of America and Australia, he says: "Neither one nor the other of those portions of the earth possessed originally any indigenous species of the *genus apis*, while on the other hand the old continent can point to three such in addition to the *apis mellifica*, namely, *apis dorsata*, *Indica*, and *sirialis of Fabricius*, all indigenous to India and the adjacent islands." He does not say that he had seen and examined any samples of those bees, and I take it for granted that he had no opportunity of doing so, as the information we now have would seem to show that these three sorts of bees are also only varieties of the *apis mellifica*, with precisely similar structure and instincts, though differing in size, and perhaps in colour.

The *London Times* of 18th August last contained a long notice about "Bee-keeping in India," from which we learn that the Indian Government have been for some few years collecting information "in all parts of India, to ascertain what are the actual facts in connection with the popular treatment of bees," and that they have now published the results of those investigations in a volume prepared for the information of the Secretary of State. It is not, perhaps, safe to judge of the whole volume from the extracts given in the newspaper, but as far as one can see, it would appear as if much interesting statistical information has been collected by the Government officials, without the assistance of either a scientific naturalist or a practical bee-keeper, and therefore leaving only vague impressions as to the varieties of the bees and the probabilities of success for an improved system of bee-culture, but sufficient to leave no doubt that some varieties of the honey-bee are spread over the whole country, that wild honey is to be obtained in quantities in most of the hilly districts; and that, if it is impracticable to introduce bee culture on the plains, it is owing to the nature of the climate and the scarcity of honey-producing plants and flowers, not to the character of the bees.

In Southern India the chief honey district appears to be about Coorg and the Wynaad, near the Neilgherry Hills. In Coorg, it is said, "the wild bees build their combs in the trees, and as many as 100 combs are occasionally found on a single tree. An average of 8lbs of honey is obtained from each comb in this district, and the bees are driven out by smoking-torches being applied to their nests." I presume each of what are here called "combs" is the separate nest of a small stock, such as may be expected to be found in a climate favouring numerous and small swarms. This district is in the part of India nearest to Ceylon, and the bee is most probably the *apis dorsata*, which Mr Benton (as quoted in Hopkins' "Bee Manual," p. 19) found building there in the open air on branches of trees, and if so many as 100 different nests may be found on one tree, it will account for the fact he mentions that "thirty natives have each taken a load of honey" therefrom. A case is mentioned of a large mango tree, some 20ft. in girth, standing on the boundary between Wynaad and Mysore, where the natives in each district exercise the right of collecting the honey from the branches overhanging their own territory. European residents in Wynaad and the Neilgherries "show how easily the domestication of the wild bee might be accomplished," and also "give a description of their habits, which shows the Indian bees are practically identical with their European cousins." Mr Morgan, Deputy Conservator of Forests in the Wynaad, comes to the conclusion that "only one kind of bee, the *apis Indica*, is capable of domestication, and that only in hilly districts, not on the plains." The larger sort of bees, which they call "large cliff bees" (building in cliffs, under projecting ledges of rock) are represented as so ferocious in habit, and furnished with such deadly stings, as to be dangerous to both men and beasts coming within their neighbourhood.

In Northern India, on the southern slopes of the Himalayas, it would appear that bee-culture might be successfully carried on if the attempt were made in a proper manner. In Nepaul, no attempt at domestication is made, as "the natives get sufficient honey for their wants from the wild bees of the forests." In Cashmere, they induce the bees to build in holes, left for the purpose in the walls of their houses. These holes are about 14 inches square by 2 feet deep (the full thickness of the walls), covered on the inside with a flat tile, which can be removed to smoke out the bees and take their combs. There are ten or a dozen such

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holes built in the walls of each house. The bees return to the robbed hive and continue to build there "generation after generation." This looks like bee-keeping made easy! Further, the honey is said to be "as pure, clear, and sweet as the finest honey of Narbonne."

The British district of Kumaon is also mentioned as being "the scene of an active and intelligent industry in bee-culture," and the production of wild honey in the Sunderbunds, at the delta of the Ganges, is said to be "superabundant."

There seems still to be a want of any clear information as to the varieties of bees and state of bee-culture in the East Indian Islands, in China, and Japan.

It will have been observed that Dr Gerstaecker makes no mention of New Zealand, and seems to have been quite unaware of the introduction of the German bee into these islands in the years 1841-42, and their rapid spread through the colony, as detailed in Hopkins' "New Zealand Bee Manual," p. 4. Is he not also mistaken in the statement that the first honey bee introduced into Australia was the Italian variety, and that in the year 1862? From Mr Fullwood's communications in the BEE JOURNAL, it is evident that, at least in Queensland, the German bee has been of long standing there until overcome by an imported moth; that the early attempts to introduce Italian bees were unsuccessful, and that he has been himself obliged to import them direct from England in 1880, and others from Italy in 1882. Can he or any other Australian apiarist inform us precisely when and in what way the German bee was first introduced into any of the Australian Colonies? It would certainly be very desirable to have this fact duly recorded.

Dr. Gerstaecker's assertion that none of the countries of the New World possessed any species of the *genus apis* until the importation from the old world took place, would seem to be at variance with the statements in Hopkins's "Bee Manual," p. 3, about a small sort of bee found in New Zealand, which builds in the ground, and seems not to collect honey, and the *apis Tregona*, found in Australia, which is also useless to the apiarist, unless we suppose that these insects may have been accidentally imported, like the bee moth into Queensland. As far as New Zealand is concerned, it does not appear to have been known to naturalists up to 1842, or even up to 1863, that any species of the *genus apis* was indigenous, as "Grey's Fauna of New Zealand," published in Dieffenbach's book at the former date, makes no mention of any such, although specifying several other examples of the order Hymenoptera, to which that genus belongs; and Von Frauenfeld, the colleague of Hochstetter, in his chapter on the same subject, published in the work of the latter in 1863, is equally silent about any variety of the bee, although he mentions in a summary way that eighteen species of insect of the order of Hymenoptera were then known. I presume the entomologists of New Zealand and Australia are now in a position to decide such a question authoritatively. At all events it may be assumed that there was certainly no variety of the honey bee proper indigenous to these countries, as, seeing with what rapidity the spontaneous spreading of the insect took place when once introduced, there can be no doubt that if it had been originally present at all it would have been found swarming in all the bush country, and must have been known to the Maoris.

It is to be hoped that the BEE JOURNAL will, in course of time, become the medium of collecting such information as will complete our knowledge of all such points, not only for New Zealand and Australia, but for all the islands of the Pacific.

Bayview Apiary, Katikati.

[The statement in the first edition of the "N.Z. Bee Manual," regarding the period at which the German bee was first introduced into New Zealand, referred to by "T.J.M.," we afterwards found to be incorrect. Instead of the first bees arriving here with Mr Cotton in 1842, Lady Hobson introduced them about two years before. The following correction appears in the second edition:

"Shortly after the first edition was published containing the above [referring to the statement in the first edition.—ED.] I received a letter from a gentleman, calling my attention to the fact that I had made a mistake in giving credit to the Rev. Mr Cotton of first introducing the common black bee into New Zealand; stating that the first bees arrived here in the ship 'Westminster,' in the early part of 1840, nearly two years before Mr Cotton came to this colony. These bees belonged to Lady Hobson, wife of the first Governor, and were watched over on board the vessel by Mr McElwaine, the Governor's gardener. They landed in the Bay of Islands.

"In a subsequent letter, the gentleman—Mr Wm. Mason, who was, at the period above-mentioned, Government architect and Inspector of Public Works—told me that he distinctly recollected them on board the ship, and stated that they were in straw hives wrapped in blankets; but believed they remained at the Bay when the Government party left to establish the seat of Government on the Waitemata—now the city of Auckland.

"From further enquiries made, I feel quite satisfied that to Lady Hobson belongs the credit of being the first person who introduced bees into this country, although, no doubt, it is to Mr Cotton we are indebted for their wide distribution."—ED.]

BEE-KEEPERS' ASSOCIATION.

L. J. BAGNALL.

BY the time this appears, I have no doubt but that an Association of bee-keepers will have been formed. That such an institution is needed, I think there can be little doubt; at the same time, there are many drawbacks to its usefulness and success. Chief amongst these is the cost of travelling and the amount of time lost in attending meetings. In America, where there are, I should think, hundreds of such associations, they have great facilities for travelling from one part of the continent to the other, and by a judicious combination of the dates of the meetings with the dates of shows of agricultural and horticultural productions, greater inducement to bee-keepers and their friends to attend the meetings of the associations is afforded.

The chief object of these associations is to acquire and disseminate the best information which can be gained from the detailed experiences of the members, or from any other available source. They afford, also, a valuable opportunity for bee-keepers making each other's acquaintance, and of comparing notes on the various matters of interest. The wide range of subjects which are discussed at the American

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associations would astonish a novice—such as, How to prevent or control swarming, Queen rearing, Size of section boxes, Standard frames, Are separators necessary? Which is the most valuable race of bees? Diseases of bees and their cure, The best way to prepare honey for market, The best hive, and many other equally interesting subjects. On all these subjects we require information of a real and practical character—the results of the experience of the apiarists of this country. The experience of other countries is of value, but not nearly so much value as that gained in our own country, with its new and varied circumstances.

The greater the number of those who can be got together, the more varied the experiences will be, and consequently the more valuable. The greater the number of localities represented the better. The chief obstacle is the want of cheap and quick means of travelling. If, however, the meetings are held in suitable places, say Auckland and other centres, at a time when there are other inducements for bee-keepers to visit these places, I think there is a tolerably fair prospect of success attending the operations of the Association. I hope all who take an interest in this subject will help to make the proposed association successful and useful both to the members and to all engaged in bee-keeping in New Zealand.

MEETING OF BEE-KEEPERS.

A NUMEROUSLY attended meeting of Bee-keepers was held at the Commercial Hotel on the evening of the 21st ult. The meeting was called for the purpose of forming a Bee-keepers' Association. Mr I. Hopkins was voted to the chair, and Mr H. H. Hayr was requested to act as secretary. The Chairman read the advertisement calling the meeting, and asked Mr L. J. Bagnall, the convener, to explain the object sought to be attained.

Mr Bagnall said, that he with several others had for for some time discussed the advisability of forming a Bee-keepers' Association. He had mentioned, in a communication to the BEE JOURNAL in the January number, the suitability of the present occasion for forming such a society. Acting in concert with the Secretary and others he had called the meeting. He thought that no time need be wasted in discussing the necessity for having a society which would bring bee-keepers together, and at the same time promote the interests of scientific bee management. He stated that the bee-keepers of the Pukekohe district had formed an association, and that their secretary, Dr Dalziel, with some other of the members, were now present. He (Mr B.) regretted that any action had been taken which might cause any division of interest, and hoped that the result of the present meeting would be to form an association with which all could unite. He moved —"That in the opinion of this meeting it is desirable to form an Association of Bee-keepers."

Mr T. J. Mulvany, of Bay View Apiary, Katikati, seconded the motion. He hoped an association would be formed embracing the whole of New Zealand, and that provision would be made for forming branch associations in any locality where there were sufficient bee-keepers to do so.

Dr Dalziel here explained how the Auckland Provincial Bee-keepers' Association came to be started, and thought it would be better for the bee-keepers present to join the association already formed rather than start another, and moved as an amendment, "That in the opinion of this meeting it is undesirable to form another Bee-keepers' Association in the provincial district of Auckland, there being already one in existence."

Mr Beloe seconded Dr Dalziel's amendment. Considerable discussion took place, Mr Mulvany, Mr Newland and others expressing the opinion that our Pukekohe friends had acted with commendable spirit in forming an association, but thought that, notwithstanding it was called the Auckland Provincial, it could only be looked upon as a local institution. As for himself (Mr Mulvany) he had only heard of it to-day, This meeting should content itself with affirming the desirability of forming an association and then communicate with the bee-keepers of the colony, asking their co-operation. The head-quarters of such an association must be in the principal town and not in a country district. Bee-keepers like himself could attend a meeting in Auckland because other business could be attended to at the same time, but it would be very inconvenient to attend at Pukekohe. On being put to the meeting, the amendment was lost and the motion carried.

In discussing the arrangements for carrying out the motion, Dr Dalziel and the other bee-keepers from Pukekohe agreed to assist in forming a colonial association if their association was recognised. Those present thought there would be no objection to this.

It was then resolved, "That a committee be formed consisting of the Chairman, Secretary, Dr. Dalziel, Messrs Mulvany, Newland, Graham, Robinson, Shadwell, and Bagnall, to communicate with the bee-keepers in all parts of New Zealand, and frame rules to be submitted to a general meeting to be called by the committee."

After a vote of thanks to the chair, several of those present gave in their names to the Secretary, as members of the Auckland Provincial Bee-keepers' Association.

A committee meeting of the proposed Bee-keepers' Association was held at the Commercial Hotel, on Monday, 24th March, at 2 p.m., for the purpose of making arrangements to communicate with bee-keepers in various parts of New Zealand, with a view of drawing their attention to the advisability of forming an association for New Zealand, to occupy the same position that the British Bee-keepers' Association does to Great Britain. Mr I. Hopkins in the chair.

On the motion of Mr L. J. Bagnall, seconded by Mr J. Newland, it was decided to send a circular to all known bee-keepers in New Zealand, inviting them to join the proposed Association. (See Supplement).

It was also resolved, "That the Secretary be empowered to communicate with the Secretary of Horticultural Society, thanking them on behalf of Bee-keepers for the facilities afforded them for the exhibiting of their produce at the late Show, and to express the hope that, on complete formation of the proposed Bee-keepers' Association, they may be able to make satisfactory arrangements with their Society for future Shows." A vote of thanks to the Chairman concluded the meeting.

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AUCKLAND PROVINCIAL BEE-KEEPERS' ASSOCIATION.

A MEETING of bee-keepers, convened by circular, was held in Mr Buchanan's Hall, Pukekohe, Auckland, on Saturday, 23rd of February, for the purpose of forming a Bee-keepers' Association. Owing to many of those interested still being engaged in harvesting operations, and consequently unable to leave their work, the attendance was not very numerous; however, the earnestness of those present made up for the want of numbers. In the unavoidable absence of Captain Hamlin, M.H.R., who was expected to take the chair, Mr W. Morgan was called upon to fill the office of chairman. After a few introductory remarks from the chairman, Dr Dalziel, the convener of the meeting, was called upon to explain its object. This he did by stating that the feeling had become pretty general amongst the bee-keepers of the Franklin district, that it would be to their interest to form themselves into an association. He pointed out that Bee-keepers' Associations had been one of the means of causing the bee industry to make such rapid progress as it had done of late in England and America, and he thought it was quite time that similar associations should be formed here for the purpose of giving an impulse to scientific bee-keeping already established in these colonies. After a few further remarks, the following resolutions were passed by the meeting:—That a Bee-keepers' Association be formed; that the name be the Auckland Provincial Bee-keepers' Association; that the association be managed by an Executive Committee, comprising the President, Vice-Presidents, Treasurer, Secretary, and three members of the General Committee; that the subscription be 5s per year; that J. C. Firth, Esq., be requested to accept the office of President; that the following officers be elected:—Vice-Presidents, Captain Hamlin, M.H.R., Captain Jackson, R.M., Messrs Pounds, Bagnall, and Hopkins; Treasurer, Mr J. Collins; Secretary, Dr. Dalziel. It was proposed that the following gentlemen constitute the General Committee, with power to add to their number:—Messrs Allan, Beloe, Brown, Elliott, Jamieson, Morgan, Savage, and Sproul. Votes of thanks to Mr Buchanan for the use of the hall and to the Chairman concluded the meeting. Subsequently J. C. Firth, Esq., declined to take office as President of the Association, owing to want of time to attend to the duties. Mr Hopkins also had to decline, when applied to, on the same grounds.

A meeting of the Executive Committee was held at the same place on the 8th of March; Dr. Dalziel, Secretary, in the chair. Correspondence from Messrs Firth, Bagnall, and Hopkins, declining to take office for various reasons, were read. The Committee then proceeded to discuss and draw up the Memorandum of Association and By-laws; after which it was decided to procure association badges. The next business being the election of President, in accordance with a resolution passed at the meeting held on the 23rd of February. It was agreed after some discussion to leave the appointment of President in abeyance until after the Horticultural Show, to be held in Auckland, on the 21st and 22nd of March, and that the Committee endeavour to secure as many members as possible from amongst the bee-keepers attending the show. It was then agreed to call a general meeting, to be held at Pukekohe, on Saturday, 15th March, for the purpose of receiving and ratifying the Memorandum of Association and By-laws; the meeting to be convened by advertisement, in the Auckland *Weekly News*, *Herald*, or *Star*.

At the general meeting of the Auckland Provincial Bee-keepers' Association, held at Pukekohe, on the 15th ultimo, the Memorandum of Association and By-laws—after making a few alterations, suggested by Mr Hopkins—were confirmed.

For the N.Z. and A. Bee Journal.

All correspondence must bear the name and address of the writer, not necessarily for publication, but as a guarantee of good faith.

TEMPORARY WINTER ADDITION TO THE LANGSTROTH HIVE.

SIR,—Your correspondent, "Dunoon," suggests what probably would be a suitable contrivance for reducing the quantity of cold air passing in at the entrance during winter. Additions like this or any other kind are not desirable if it is possible to avoid them, they increase expense and involve labour in fixing and removing. If by experience it is found that some such protection is necessary, then I would recommend that Dunoon's plan should have a fair trial. My own opinion is that external additions are unnecessary in any part of New Zealand if care and proper precautions are taken in wintering. If the apiary, as it should be, is in a situation which is sheltered from the cold winds, all that I think will be found necessary is to reduce the entrance in size just sufficient to allow the bees to pass in and out conveniently, cover the frames with a chaff cushion or other warm covering, and, with wood or chaff division boards, reduce the size of the hive so that the bees will cluster on all the frames between the division boards. In very strong colonies the division boards would probably not be required, still I think it would be advisable to divide off all frames upon which bees do not cluster. The covering might be of old blanketing or other warm material which will allow the necessary ventilation to pass through. If a few supports were put under the covering about the centre of the cluster just high enough to allow the bees to pass from one frame to another it would be an improvement. I have wintered bees in Langstroth hives at Thames without any division boards or covering other than the ordinary mat. One small late swarm came through last winter in this condition and did well. The warm covering and division boards are very useful in the spring, when the young brood begins to come.

I trust that the bee-keepers in the South will publish their experience in wintering in Langstroth as well as other hives, so that we may be able to determine if any additions, and of what character, are necessary for wintering in the Langstroth hive. To winter bees suc-

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cessfully, so that they may be strong and healthy in the spring, is very important to bee-keepers, and deserves careful attention.

L. J. Bagnall.

Hape Apiary, Thames, March, 1884.

FUMIGATING HOUSE.—APIARY BOOK-KEEPING.

Sir,—In the February Journal Mr Thomas asks for a description of the smoker I use. I thought the best reply was to send him an illustrated price list, one of a dozen or more sent me with the smoker. I enclose another with this, and would recommend you to import a quantity of the smokers; they are really first-class, and would sell well.

As the season draws to a close provision must be made for a very important matter in an apiary of any size, namely, storing the spare combs and keeping them safe from the depredations of the wax-moth. Would you kindly give a description of a fumigating-house suitable for an apiary of 100 to 200 hives, its proper dimensions, and the internal fittings required. Last year I fumigated my combs in the hives, piling up three or four and burning a little sulphur in an empty hive below. For a few hives this is well enough; but it is hardly effective in a large apiary, as it takes a deal of time and trouble.

I have not adopted "T. J. M.'s" elaborate system of book-keeping in my apiary. It looks very nice on paper, but practically I don't see that it is of much consequence to know exactly what each hive yields. I keep a record of the operations on every hive on the lid, always carrying a lead pencil for the purpose—and I thus read the history of every hive at a glance as I work among them. In the case of a few exceptionally good ones, I have taken the trouble of weighing the honey extracted, and I find that from one swarm, hived on 22nd December, I have taken 70lbs of extracted and 52lbs of comb honey. On the other hand, many of my hives have yielded very poorly, the excessive swarming so late in the season deranged them; some got queenless and dwindled away, laying workers appeared in others and produced a lively population of drones, while many others, even though provided with fertile queens, have not been a credit to the apiary. My total yield so far has been 2300lbs extracted and 350lbs comb honey. The weather is again very broken and unsettled, and, though a little rain would have been welcome, a week of it is overdoing the thing from a bee-keeping point of view.—Yours faithfully,

Taraheru Apiary, George Stevenson.

February 18th, 1884.

[The description of a Fumigating room will be found in another column. After you have had a little more experience we believe you will find that it is of very much "consequence to know exactly what each hive yields." One of the most important features of the modern system of bee-culture is the improvement of our bees as honey-gatherers. Now, as this can only be accomplished by breeding the queens to stock our apiary from those we have proved to produce the best bees, how is it possible to know which queens to keep and which to discard without "knowing exactly what each hive yields?" In apiaries where no system of culling-out the inferior queens is practised, colonies will be found varying in yield of honey from 100lbs. or more down to almost nothing. It is the boast of that eminent apiarist Doolittle, that by careful breeding he has worked up such a strain of bees that he can now depend upon each colony producing as near as possible an equal quantity of honey in any one season. We admit that there is a great want at present of some simple and expeditious method of apiary book-keeping, but that records *should* be kept every thoughtful bee-keeper will admit.—Ed.]

TRANSFERRING BUSH HIVES.

Sir,—In the January number of the Journal I saw an account of transferring bees from a tree to a hive. I will give you my experience in that line, for the information of such of your readers as may find it useful. I commenced bee-keeping in October, 1883, by taking a swarm out of a large matai tree; I proceeded in the following manner:—Having felled the tree, I cut a hole in it near the bee nest, large enough to allow me to work with freedom; I then placed the hiving-box on its side on the log—I use a hiving-box as described by "T.J.M." in the October number. First I removed all the comb, driving the bees out of my way with smoke; I then got a scoop made from the butt end of a nikau leaf; I brushed the bees into this, and shook them into the box, repeating this till I had the greater part of the bees in, the queen being among them; the remainder went in themselves; I then tied the mouth of the calico bag. Having carried the bees and comb home, a distance of two miles, I made some rough frames, put the best of the comb into them, and placed the frames in a box hive, shook the bees among them, put on a mat and lid, and set the hive on a stump. In about a month I took 20lbs. of honey from them. By the 18th of January, I had robbed eighteen bush hives; out of these we have fourteen swarms, seven in box hives and seven in "Langstroth." Those in the "Langstroth" I hived on one-third bush comb, one-third full sheets of comb-foundation, and one-third starters only. Two out of four hives we lost were crushed in the fall of the tree, while at the third we were be-nighted, and the fourth I could not take. There was less honey in the bush hives this season than I remember seeing before. I used thread for fastening the comb in the frames, but it does not work well; I shall use wire next time.

Thomas Hedley.

Rawera Apiary, Ruapekepeke, Jan. 28, 1884.

PACKING HUMBLE BEES.

The following letter has been kindly sent to J. C. Firth, Esq., and as the suggestions contained therein may be useful to others, we give it publicity:—

Sir,—I hope you will excuse the liberty I have taken in addressing you. I do so in the hope that I may make some suggestions, which will be useful *re* your attempt to import the humble bee. I see from the *Weekly News* your last consignment has not done so well, and also that you are going to make another attempt immediately, which I think will not be wise, for the following reasons: At the time an order sent off now would arrive, the bees will be coming out of their winter quarters, and possibly might be caught, but they would require to be put to sleep again, and when they arrived in Auckland it would be winter, so they must be kept

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asleep till spring, or until September, which, I think, will be fatal to them, as they will have been torpid nearly twelve months. The plan I would suggest would be to mark a few nests in summer, when they are easily found, and then in September or October, when the workers are all dead, there would be from four to eight or ten young queens in each nest; these ought to be secured before they disperse for their winter quarters.

How to dispose of them now is, I confess, a difficulty. I think the nearer we can copy nature the better. The insect now seeks a dry bank, where it buries itself nearly two feet deep in the ground, and there remains till the warmth of spring brings it to life again. I know this, because I have dug them out, and they go so deep to be out of the frost. They also choose a north aspect, so that snow does not soon melt off the ground, which also helps to keep them from frost.

Bearing this in mind, I think they ought to be packed in earth, or, better still, allow them to pack themselves, which they would, probably, if facilities were offered them. To induce them to do so, have a case, say about three feet each way, filled to within about six inches, with earth pressed so as to be firm, but not hard, with some glass in the lid, so as to allow them a little light, which put in a cool place. Perhaps, it would be better if the earth could be put in like a ridge, so as to form a bank, thus ∧ I dare say they ought to have air as well as light. I think frost will kill them, so they should not be frozen, but kept a little above freezing point.

If secured at this time, and sent off immediately by steamer, they would arrive in Auckland by New Year, which allows them time to rear a brood of queens for a future season. Trusting that my interest in the matter will excuse this intrusion.—I am, &c.,

WILLIAM WRIGHT.

STARTING AN APIARY.

SIR,—I am purely and simply a novice in the art of bee-keeping, so hope you will excuse me asking your advice through the JOURNAL.

Wishing to start an apiary as soon as possible, and being at a loss where to get bees to start with, I offered a young fellow a certain sum of money to get me a swarm last spring. Well, one evening as I was homeward bound with my coach, I met him with a four-bushel sack on his back, when he commenced calling out: "I have the little chaps you were asking about." Now here was a job, my coach was full of passengers and, of course, had they have known what was in the sack it was not likely they would agree to have it on board, and yet I was so anxious to get the bees that take them I must; so I gave the boy a wink and told him to shove the sack in the box of the coach, which he did. I was rather alarmed, I can assure you, for fear any of them should get loose; however, I reached home without having any trouble with them. It was now dark, about 9 p.m.; but I got two boxes, placed one on the ground under a tree as a stand, then emptied the bees into the other and put it on the first. In the morning I found a few dead bees outside, but the rest were all right. I saw nothing more of them for some time (middle of December), when I turned up the box and found the bees clustered at one end, with no appearance of any work done. The next day being fine, I noticed them very busy at work, carrying in a red and yellow substance on their legs; I took out my watch and timed them—they went in from 7 to 10 per second, all heavily laden. I tried yesterday to look into the box, but it was so heavy and troublesome to move that I thought I had better let it alone until I had asked your advice. I have never before had anything to do with bees, and know nothing about them, except that they sting sometimes, so if you will kindly instruct me what to do I shall feel obliged. Yours, &c.,

Bombay, Feb., 1884. R. S. WHITE.

[The best advice we can give, is to let the bees remain as they are until next spring, sheltering them from the wind and rain through the winter as much as possible. In the meantime, get a Langstroth hive complete with comb, &c., ready to transfer them into, and a work on bee-culture—the "N.Z. Bee Manual," for instance. Study it, and make yourself familiar with modern bee-culture as described therein, when you will be ready, by the time the season comes round again, to go to work in a systematic manner, and so reap a profit from your little workers.—ED.]

LIGURIAN BEES IN SOUTH AUSTRALIA.

WITH reference to the Ligurian bees mentioned in our last issue as having been handed over to the care of Mr A. E. Bonney, by the Chamber of Manufactures, Adelaide, we notice the following in the *South Australian Advertiser*, of February 8th:—

The following report with reference to the Ligurian bees imported by the Chamber, was received from Mr A. E. Bonney, and read: "So far my attempts to raise Ligurian queen bees have not been very successful. From two hives arranged for that purpose I have only obtained three queens. One of them is now laying but I cannot tell if she has been fertilised by a Ligurian drone until the eggs hatch in three weeks time. My want of success was no doubt owing to the exceptionally bad honey season. Honey is now coming in very fast, and should it continue to do so I shall have a better chance of success with the next lot. The Ligurian bees are still doing well, and keep far ahead of the black bees. During one week in January they gave me twenty pounds of surplus honey. I enclose a letter from Mr. Turner, of Kangaroo Island, written in reply to some questions of mine. You will observe that he believes his are the only bees there, and if he could be induced to put them into frame hives there would be no difficulty in the way of introducing Ligurian queens to take the place of the black ones. Whilst his bees are in boxes it is a difficult matter to deal with them. I also forward for your inspection some bee papers, and suggest that if the Chamber would add one of them to the periodicals now in the reading-room, it would be a benefit to beekeepers." Mr. Bonney attended and exhibited a one-comb observatory hive in operation, which was inspected with much interest. The secretary was authorised to confer with Mr. Bonney as to the best plan of establishing the Ligurian bees on Kangaroo Island. It was resolved that the Chamber subscribe to the *British Bee Journal*, *the American Bee Journal*, and the *New Zealand and Australian Bee Journal*."

Mr Bonney is doing excellent work in South Australia, in the way of making known the advantages of the modern system of bee-culture; he having lately read a very interesting and exhaustive paper on the subject at the Chamber of Manufactures, before a crowded audience. Mr Bonney also exhibited a number of apiarian implements and explained the chief features of each. The paper, which is a lengthy one, embracing all subjects in connection with improved apiculture, is published in full in the supplement to the *South Australian Register* of February 12th.

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QUERIES AND REPLIES.

We shall from time to time give replies through this department to questions pertaining to bee-culture, propounded by our subscribers. We would ask our correspondents to be as concise as possible, and to number their questions 1, 2, 3, and so on.

QUERY.—*Queen Flying.*—Will you kindly inform me as to the following: While looking into one of my bee-hives, I lifted a frame and the queen bee was on it, but before I got the frame back into the hive, the queen flew off and I lost sight of her. Is there a possibility of her returning to the hive? if not, what would you advise me to do?—Yours respectfully,

EDWARD MURRELL.

Cromwell, Feb. 22, 1884.

REPLY.—It is almost certain that she would fly back to the spot from whence she took wing and enter the hive again. We have had queens fly from the frames when attempting to catch them, but not otherwise, and they have invariably come back. Supposing she did not return, and there were worker eggs or larvæ in the hive, as soon as the bees discovered their loss they would set about raising another queen.

QUERY.—*Weight of Swarms, Opening Hives, Supers, &c.*—1st. What is the weight of a good swarm of bees? 2nd. Is it necessary to smoke the bees on opening the hive, or might it be opened without smoking them? 3rd. After placing the super on the hive, should the lower one still be examined, and how often? and if so, is the super placed on a board while the examination lasts? 4th. Have you had an opportunity of comparing Holylanders with Ligurians? and if so, which have the greatest merits?

C. W. BABBAGE.

REPLY.—1st. A swarm weighing six pounds may be considered a fairly good one, and one of eight pounds, a large swarm. 2nd. The necessity of using smoke on opening a hive will depend very much upon whether the bees are gathering honey or not; if they are storing honey rapidly, the cover, mat, and frames may be removed with as little danger of the bees using their stings as when smoke is used; at other times, as a rule, smoke is required. It is as well to have the smoker always by you when manipulating a hive, as it is handy, if needed, for driving the bees out of the way. 3rd. If the instructions we have already given with regard to the lower hive be carried out when putting on the super, it will not need examining very often—possibly once in three or four weeks will be sufficient. If at any time the queen commences laying in the super, the lower hive should be examined at once, and as much room as possible given in the brood nest by carefully extracting the honey from the combs and, if necessary, removing a frame or two of brood, replacing these with empty combs or frames of comb-foundation, and any combs containing eggs or brood in the upper box placed in the lower one. 4th. As we have before stated, we can see so little difference between our Holyland and Ligurian bees that we have decided to call them all Ligurian bees, and are now breeding them together.

NOTICE TO NEW SUBSCRIBERS.

NEW subscribers can obtain, if they wish, all the back numbers of the JOURNAL from its commencement, and thus have the first volume complete.

METEOROLOGICAL OBSERVATIONS FOR THE MONTH ENDING 29th FEBRUARY, 1884

(SUPPLIED BY T. F. CHEESEMAN, ESQ., AUCKLAND.)

AUCKLAND.

Month.	Barom. corrected (inches.)	Max. Temp. in Shade.	Min. Temp in Shade.	Mean Temperature.	Solar Radiation.	Minimum Temp. Exposed.	Rainfall in Inches.
FEB.	30·19	69·2	56 8	63 0	136 0	49 6	1·61
	29·98			67·6			3·81

Remarks.—From 1st to 4th fine and clear, with light S.W. or S winds; 5th, stiff breeze from N.E. with heavy showers during night; 7th and 8th, fine, wind varying from N.W. to N E.; on the 9th, heavy showers from N.E. with little wind; from 10th to 20th, mostly fine, slight showers on 13th, 16th, and 17th, wind mostly from S.; 21st and 22nd, N E. gale, with heavy showers but little continuous rain; from 23rd to end of month, fine clear weather, with light S. wind Barometer pressure very high throughout, and much above the usual average; mean temperature still very low for the time of the year; rainfall small, not reaching half the average.

HONEY MARKETS.

AUCKLAND, April 1st, 1883.

HONEY.—First-class honey, both comb and extracted, in good demand. Sales of comb in 1lb sections, wholesale, 10d; retail, 1s. Extracted, in 1lb tins, wholesale, 8d; retail, 10d; glassed, in 2lb jars, 9d per lb; retail, 1s; 60lb tins, wholesale, 6d.

BEESWAX.—Scarce; buyers for clean yellow, 1s per lb; dark, 10d to 11d.

H. H. HAYR, High-street.

AUCKLAND, April 1st, 1884.

The demand for good honey remains about the same as last month, very little as yet having come into the market. The prices are as follows: Wholesale, 1lb tins, 8s to 8s 3d per doz.; retail, 1lb tins, 11s to 12s per dozen. Bulk honey, wholesale, 4d per lb; retail, 5d per lb. Extra fine, 6d per lb; in 1lb sections, from 7d to 9d per lb.

AUCKLAND AGRICULTURAL AND MERCANTILE CO., Limited.

ENGLAND.

At present we have no reliable source from which to obtain the English honey market quotations, but having called the attention of the editor of the *British Bee Journal* to the matter, we have no doubt he will see to their being published shortly.

AMERICA.

NEW YORK, February 11th, 1884.

HONEY.—White clover and basswood in 1lb and 2lb sections, 15@21c; dark, and second quality, 15c; extracted white clover, in kegs and barrels, 9@10c.

BEESWAX.—Prime yellow, 34@35c.

H. K. & F. B. THURBER & CO.

SAN FRANCISCO.

HONEY.—Strictly choice is enquired for in a small way, and for such the market is moderately firm. For common qualities there is little or no demand, and prices favour buyers. White to extra white comb, 15@18c; dark to good, 9@11c; extracted, choice to extra white, 6@7½c; dark and candid, 5c.

BEESWAX.—Wholesale, 27½@30c

STEARNS & SMITH, 423, Front-street.

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Per line afterwards ...	0	0	6	Half page... ...	1	7	0
Inch of space	0	3	6	Third of page ...	1	0	6
Quarter column... ...	0	8	0	Quarter page ...	0	17	0
Half column	0	15	0				
Whole column	1	5	0				

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ADVERTISING DEPARTMENT.—Advertisements for the next issue should reach the publisher by the 24th of each month.

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THE NEW ZEALAND AND AUSTRALIAN

BEE JOURNAL.

Devoted exclusively to Advanced Bee Culture.

VOL. I. No. 11.} AUCKLAND, N.Z., MAY, 1884. {Published Monthly, Price Sixpence.

THE NEW ZEALAND AND AUSTRALIAN BEE JOURNAL

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All correspondence intended for publication to be addressed to the Editor, Matamata, Auckland, New Zealand, and business communications to the Publisher, P.O. Box 186, Auckland, New Zealand.

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CALENDAR—MAY.

THE honey season of 1883-84 may now be reckoned amongst the things of the past. In taking a retrospective view of it, we can call to mind many circumstances that made it one of the most peculiar seasons that it has been our lot to experience in New Zealand. Commencing with the month of September, we find the middle portion was unusually fine, with exceptionally sharp frosts at night, especially in the inland districts; the latter part being very stormy and wet. October opened fine, and continued so till about the 9th, which raised our hopes, as breeding had been going on very rapidly and the strongest of our colonies were preparing for swarming. With our bees in prime condition, and the aid of favourable weather to bring on the clover, we anticipated a rich honey harvest. But, alas! our anticipations were doomed to disappointment, for nearly the whole of the remainder of the month—when the bees should have been working on clover—we had a succession of wind, hail, and rain storms. Very little honey indeed had been gathered from fruit blossoms, owing to the severity of the weather. There was no change till near the latter part of November, when we had a couple of days or so fair. Through a portion of October and November we counted no less than 39 days in succession on which rain fell. Our bees had scarcely gathered a particle of honey up to the end of the first week in December, for, although some clover had been in blossom about a fortnight, the temperature had been so low that no secretion of honey had been going on. Very little was gathered during the remainder of the month, barely sufficient to serve the bees as food—in fact, it was not until January set in that our bees were able to make any headway at all, and then only at intervals. By the end of the month they had pulled up a bit, and were able to gather a little from dandelions and thistles during February; but white clover, the plant we look to at Matamata to give us our main crop of honey—we have no other—proved almost a total failure. However, we do not anticipate having another season like the last for many years to come, and we are somewhat consoled by the

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fact that very old colonists do not remember such a one before.

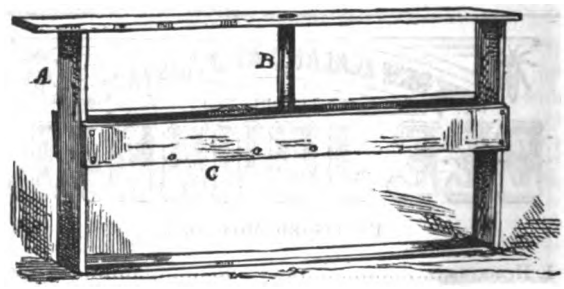
Those who, like ourselves, have to depend on white clover have suffered the worst, more especially those located inland. In districts near the sea coast, and places where there is a variety of pasturage, bee-keepers have come off much better, although in no case that we have heard of has there been, at the most, more than half a crop secured. Even in this case we must congratulate ourselves, and be thankful it is no worse; for in California, at present one of the largest honey-producing countries in the world, bee-keepers are often more unfortunate than we have been this season, so that we must not complain but do our best and wait patiently till next season, when, in all probability, we shall be able to more than make amends for the past one.

WINTERING.—Wintering bees successfully in any part of the Australasian colonies should not by any means be a difficult matter. The conditions necessary to ensure success are very simple indeed, and when these are complied with, there need be no apprehension for their safety.

All preparations should be made this month. Each colony should be overhauled, sufficient food provided, top boxes removed, bottom boards cleaned, and extra mats of some warm, porous material provided; weak and queenless colonies should be united and all made snug.

UNITING.—No time should be lost in uniting very weak and queenless colonies. We have already given instructions for uniting, but for the benefit of new subscribers we repeat them: When two or more are to be united, move the weakest a few feet each day till alongside of the strongest. In the evening, remove some of the side frames in the strongest hive, and move those on which the bees are clustered to the side of the hive; place one or two vacant combs next to the bees, and gently lift out the frames with the bees adhering from the other hive and hang them next to the vacant combs, put on the mat and close the hive. It is as well, before uniting, to remove one of the queens—where there are two—and cage her, in case anything should happen to the other. Many bee-keepers sprinkle all the bees before uniting with scented syrup, to give them the same scent; others smoke them for the same purpose, but we have always been very successful without either. To save risk of losing a very valuable queen, we would recommend caging her as in the usual way when introducing queens until all danger of fighting is past.

FEEDING.—The best food that can be given for winter stores is sealed honey, but where this is not to be obtained, a syrup made of the best sugar will answer, provided it is given to the bees before very cold weather sets in. Any colonies not having sufficient stores to carry them through the winter, should accordingly be fed this month, so that any evaporation of the syrup required may be accomplished while the warm weather lasts. Another reason why feeding should be done this month is, that it is better that bees should not be disturbed more than is absolutely necessary during cold weather. A very good syrup for feeding at this time of the year may be made by adding a half-pint of water to every pound of sugar used; boil for a few minutes, and when cool it is ready for use. Various feeders have, from time to time, been devised for supplying the food, but almost any one will do in warm weather; for rapid feeding, a tin dish two or three inches deep, with a thin, wooden, perforated float to keep the bees from being smothered in the syrup, if placed on top of the frames, is as good as any. In cold weather this would not answer, as the bees would be unable to reach it most of the time. The food then should be put down amongst the cluster to keep it warm and handy for the bees. A simple form of feeder we saw mentioned by a correspondent in an American bee journal, and almost the same as that described by Mr Brightwell in this issue will answer the purpose. Any bee-keeper will be able to make a ½doz. of these in a very short time. [See engraving.]



FRAME FEEDER.

All that is required for making this feeder is a broad or narrow frame, and three bottom bars for making the trough, unless a deeper trough is needed, then other pieces for the sides may be substituted. Two feeding troughs instead of one may be fixed in the one frame if so desired. The troughs should be given a coating of hot beeswax, to make them perfectly tight and to prevent the wood absorbing the syrup. The tube shown in the engraving, with its end running through the top bar, is for convenience of pouring the syrup into the trough without removing the frame. If the trough is a deep one, then it would be better to use a float.

Everything should be done to prevent the interior of the hives getting damp, as this is very liable to cause dysentery amongst the bees. Covers should be examined, and any cracks that would allow leakage should be stopped. A strip of tin tacked over a crack and painted will answer the purpose. An extra mat or thin chaff cushion laid on top of the frames will retain the heat and keep the colony warm. There should always be good ventilation at the entrances, we never like to see a hive pushed right back in winter. If it contains a fairly strong colony, a three or four inch entrance is much better than a smaller one. We have noticed that outside combs are more liable to become damp when only a small entrance is allowed. When a colony cannot cover more than five frames in cold weather, division boards should be used to contract the hive, so as to crowd the bees on to the centre frames, the outside ones may then be removed.

We would advise all new subscribers to obtain the back numbers of the JOURNAL while they are in print. They will be found invaluable for reference.

Every farmer ought to have a few stands of Italian bees. They will pay many times their cost.

Ants can be destroyed by sprinkling salt around the hives, and in the ant-hills.

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MARKETING HONEY.

(CONCLUSION.)

COMB-HONEY.—This is a class of honey that there will always be good demand for amongst a certain class of people, though the demand in the general market, when compared with extracted honey, will be limited. The most handy and popular package for marketing comb-honey in is the one pound section box. Two pound sections make a very nice package, but do not sell so well. We have raised large quantities of both for market, and found on an average that four one pound sections will sell to one two pound. Half pound sections have been largely used in America during the past season, but the high price that has to be asked for these in proportion to the one pound boxes, to give an equal profit, is likely to limit the demand for them. The proportional increase of price required to be obtained for half pound sections, to pay as well as the one pound sections, is calculated to be about two thirds. Supposing one pound sections to be worth 1s., then two half pound ones should be worth 1s. 8d., so that we think this size can never become very popular. With regard to two pound sections, a prominent Auckland provision merchant once advised us not to put on the market packages of honey that would cost retail more than 1s.; for, said he, "I find that all packages, 1s. or under, will sell more readily than those of double the size, even supposing they only cost another sixpence." Taking everything into consideration, together with our own experience, we cannot recommend a better or more suitable package for comb-honey for market than the one pound section box.

Before removing sections from the hive, every cell should be sealed if possible; but they should not be left on the hive after this is done, as the bees continually running over the face of the combs will soil them in time, or at any rate destroy that bright appearance that makes comb-honey look so tempting. As soon as taken from the hive, they may be placed in the honey room, and as early as convenient, each section should be thoroughly cleaned from propolis and made to look as nice as possible. They can then be placed on the shelves for a few days, to allow the comb to set, when they may be labelled and crated. Some of our readers will no doubt be surprised when we speak of labelling sections, but it is just as necessary to label sections of comb-honey as it is tins of extracted honey; we found this out about three years ago to our cost. When supplying comb-honey to shopkeepers at that time we always left them a glass honey crate to retail it from. These crates had our name painted on them, and being got up nicely, was always sure of occupying a prominent position either in the window or on the counter. The sections were not labelled, and on one occasion a lady who had purchased some taken from one of our crates told us that she thought our honey was too dear, that she had that day bought some sections and weighed them, and found that none exceeded three quarters of a pound. To this we replied that they certainly could not have been ours, and there must be some mistake about it. When informed where they had been purchased, we at once went to the shop, and found that the shopkeeper had been retailing from our crate, and passing them off as ours, a number of sections that he had taken from his own hive, and were, as the lady had said, very little more than half full. To prevent this kind of unprincipled work in the future, we saw that it would be necessary to either stamp or label each section, and this we would advise every bee-keeper to do before sending his comb-honey to market. A good sized rubber stamp is the cheapest and handiest; it should have large-sized letters so that they could be plainly seen. The name and proprietor of the apiary would be all that would be required on the stamp. If labels are used, they need only cover one side of the secton, say 3½in. x 1¾in., and may be of some neat design, printed in colours.

When shipping comb honey to distant markets particular attention must be paid to the packing. For if one section should happen to come to grief, and the honey start running, it would be liable to spoil the appearance of all the sections in the crate. The best style of shipping-crate that we know of at present is the one shown by Mr Collins at the late show, which took our special prize. It is simply a case to hold 24 one-pound section in one tier; between each row of sections a thin board is placed, the last one being a little stouter than the rest and wedge shaped, so that it will fit tight and prevent the whole from moving when pressed into place. In Mr Collins's crate the dividing boards were rather stout. Boards one-sixteenth of an inch thick, or cardboard, would do equally as well, and make the package much lighter. The wedge-shaped board for tightening all up would, of course, require to be somewhat stouter. We also think that cases of this kind could be made to take a double tier by having what might be termed a false bottom, put in just above the lower tier of sections, on which to stand the upper one. If the upper tier were resting on the lower one, those below would be very liable to get squeezed and damaged; but with the false bottom between, this could not happen. Before shipping, the crates should be marked as advised for extracted honey. When supplying shops the bee-keeper should see that a glass crate or show-case is provided, so that when being retailed the honey may be kept from flies and dust. One would be sufficient for each shop, and they should be supplied to the shopkeeper at cost price. With regard to painting show-cases, we noticed most of those at the late show were white. Now, white we consider a very bad colour, as it shows comb-honey at a disadvantage. Even the lightest of comb honey has a slight tinge of yellow, and, when shown in contrast with pure white, does not look nearly so nice as when in contrast with a dark colour; besides, a white crate so soon looks soiled after being handled. We would, therefore, recommend painting show-cases a dark colour—say blue or green.

GRADING HONEY.—Nothing will tend to do the honey trade more good, or give confidence to dealers, than the proper grading of honey. We have several times seen crates with nice-looking well-filled sections near the glass, and the rest of the space filled with a second or third-rate article. This is what our American cousins term "veneering." All tricks of this kind eventually result in a loss to the producer. Both comb and extracted honey should be graded and sold according to quality, each grade being kept by itself. Samples of extracted honey can be sent to merchants and dealers through the post in small tin bottles, and the crop sold by sample either tinned or in bulk. There is no convenient way to send samples of comb honey except by

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forwarding a small crate of, say, half-dozen sections, but whatever is sent should be a *fair* sample of that offered for sale.

WORKING APIARIES ON SHARES.

A CORRESPONDENT has asked us to state what we consider would be an equitable arrangement between two parties in working an apiary on shares.

In America, where this is often done, the general rule is that one party furnishes all the bees, including the hives they are in, to start with, and the other works the apiary. At the end of the season all expenses for new material are deducted from the profits, and the balance, including the increase, equally divided; the original colonies still belonging to the person that furnished them. We will put the matter plainly by taking an imaginary case.

A agrees to work B's bees on shares; B then furnishes A with, say, twenty complete hives with bees, which are located at A's place, as being most convenient for him. Spare hives, comb, extractor, smoker, nucleus hives, &c., &c., are then procured for working the apiary, to the value of, say, £28. The increase of stock at end of season is twenty colonies; the proceeds derived from sales of honey and bees amount to, say, £50; then the partnership account would stand at end of season something like this:

Cr.		
By sales of honey and bees		£50
Dr.		
To hives, extractor, and other appliances ...	£26	
„ labour for putting hives together, &c. ...	£2	
		£28
Profit to be divided		£22

A and B would then take each £11, 10 colonies and hives, and an equal division of the other appliances; B, of course, retaining his original 20 hives and bees. The partnership then closes for that season. Should, however, it be the wish of both parties to continue the partnership, then B must allow A some remuneration for attending to his bees during the winter months.

There is also another mode of partnership, in which one partner provides everything, and the other works the apiary for half the value in cash of the entire proceeds. In this case B would furnish the hives and bees to start with, the whole of the material required, and pay for labour in putting the spare hives together, painting, &c., while A would work the apiary. At the close of the season A would take £11, the supposed half of the proceeds, from sales of honey, &c., and B would have to pay him the full value of the 10 colonies of bees—not including the hives which, of course, belong to B.

In "Quinby's New Bee-keeping" we notice the following on the subject of "Taking bees on Shares": —"In managing bees for other parties, as well as furnishing them to those who wish to care for them, we have usually been governed by the following rule: One party furnishes all the bees, and the other does all the work. All expenses for new material, etc., are shared equally, and the receipts—including the increase—are equally divided. The ownership of the original colonies is unchanged."

BEE-KEEPERS' ASSOCIATIONS.

Now that a very considerable amount of interest is being taken in the formation of Bee-keepers' Associations amongst some of the more prominent bee-keepers of New Zealand, it may be as well to enquire as to what has been done in this respect in those countries where bee-culture has already developed into an industry of great importance.

Taking Great Britain first, we find that the British Bee-keepers' Association has been in existence since 1874; this, we believe, to have been the first one formed there. Its objects, briefly stated, are:—"For the encouragement, improvement, and advancement of Bee-Culture in the United Kingdom, particularly as a means of bettering the condition of cottagers and the agricultural labouring classes, as well as the advocacy of humanity to the industrious labourer—the honey bee." It is presided over by the Baroness Burdett-Coutts, and has amongst its vice-presidents two members of the Royal Family and several noblemen. The Association was formed shortly after the *British Bee Journal* started, when bee-keeping in Britain was in a very backward state. For some years it had a hard struggle, and much uphill work to accomplish its purpose; but, with the good of the agricultural labourer at heart, and a desire to do away with the barbarous practice of murdering the bees, it persevered with its good work until it now stands out as a shining light to all the bee-keeping world. One of its objects is the encouragement of county associations, which being affiliated with the parent association, mutually assist each other. Previous to 1879, we believe there were only one or two of these, but latterly the number has increased very fast; last year (1883) there were no less than 33 county associations affiliated to the parent one, some having as presidents members of the Royal Family, while nearly all the rest are presided over by noblemen. About four years ago some members of the British Bee-keepers' Association made a tour through various parts of Ireland, taking with them their bee tent, in which exhibitions of bee manipulating were given in various districts for the edification of the peasantry. This was the means of causing some of the clergymen and well-to-do classes to take an interest in the matter, and since that time there have been two or three associations formed in that country, Scotland also can boast of her bee-keepers' associations; while, if the increase continues at the same rate that it has obtained during the last five years, every county in the United Kingdom will have its association in another few years.

Turning to America, we find that nearly every State has its bee-keepers' society or association, besides a number of county ones, and yet the cry is still for more. In a late issue of the *American Bee Journal*, we notice no less than five meetings called for the purpose of forming county societies. At the annual conventions, as they are termed, bee-keepers are invited from all parts to attend them; special arrangements are made with the railway companies for carriage at reduced rates. These meetings usually last several days, and brings into personal contact the most advanced bee-keepers from all parts of the Union, who were previously unknown to each other except by repute. France, Germany, Switzerland, Austria, Italy, and, in

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fact, all European countries have their bee-keepers' associations. A gentlemen long resident in Germany informs us that almost every district throughout the empire has its society, and we know that some of the most scientific men in Europe are members of them.

In all the countries mentioned, bee-culture is rapidly advancing, and this, no doubt, is due in a great measure to the dissemination of bee-literature and to bee-keepers' associations.

The action lately taken by some of the prominent apiarists of the North Island in endeavouring to form a sort of colonial association for New Zealand, is a very commendable one, and one that we sincerely hope may be attended with success. There cannot be a question as to the good such an association will do to the bee-keeping industry if well supported. The bee-keepers of Pukekohe and surrounding districts are taking a great interest in developing bee-culture, and as our readers are aware, have already formed an association which we have no doubt will, with such an energetic secretary as Dr Dalziel to see to its welfare, in time become a strong one, and be the means of doing a great deal of good. We hope to see the time when bee-keepers' associations will be formed in all the principal districts throughout Australasia, and sufficient interest being taken in the bee industry to call together bee-keepers from all parts to the annual gatherings.

As a guide to framing rules, &c., in the formation of bee-keepers' associations, we publish those of the Middlesex (England) Association.

RULES AND REGULATIONS OF THE MIDDLESEX BEE-KEEPERS' ASSOCIATION.

President—The Right Hon. Lord George Hamilton, M.P.
Hon. Sec.—Mr Bernard G. Wilson, Marlborough Gardens, Ealing.

1. The name of this Association shall be the Middlesex Bee-Keepers' Association.

2. Its objects shall be the encouragement, improvement, and advancement of Bee Culture in the County of Middlesex, particularly as a means of bettering the condition of cottagers and the agricultural labouring classes, as well as the advocacy of humanity to that industrious labourer—the Honey Bee.

3. The Association shall consist of a President, Vice-Presidents, Secretary, and Treasurer, members and honorary members.

4. Donors of £5 5s shall be Life members. Working or Practical members shall subscribe 10s 6d, and Ordinary members, 5s and upwards.

5. Donors of prizes of the value of twenty shillings and upwards shall be honorary members for one year, and be entitled to one vote in the election of the Committee.

6. All subscriptions shall be payable in advance, and become due on the first day of January in each year; and until such subscription be paid, no member shall be entitled to the privileges of the Association. If any subscription remain in arrear twelve months, that is, until the 31st day of December following, the person not paying the same ceases to be a member.

7. The management of the Association shall be conducted by a Committee of fourteen members. The President, Vice-Presidents, Treasurer, and Secretary, shall be *ex officio* members of the Committee, five to form a quorum, the Chairman to have a casting vote.

8. The Managing Committee shall be elected annually by voting papers, which the Secretary shall cause to be sent to each member at least one month prior to the Annual General Meeting (which shall be held as early in each year as possible), together with the names and addresses of those members who are willing to serve on the Committee for the ensuing year (any vacancy that may occur during the year to be filled up from the unsuccessful candidates, according to the priority of votes obtained at the election). The President, Vice-Presidents, Treasurer, Auditor, and Secretary, shall also be elected at this meeting, and questions of the government and management of the Association shall be discussed and resolved upon.

9. The Managing Committee shall publish an annual report, balance sheet, and list of members, together with the amounts of their subscriptions, which the Secretary shall cause to be sent to each member of the Association, together with an agenda of the business to be transacted at the general meeting, at least six days prior to the date of such meeting.

10. The Committee shall have the power to make and alter by-laws, provided always that they shall in no case contravene a rule made in General Meeting.

11. If the funds of the Association admit of it, the Committee shall hold one or more Apiarian Exhibitions at such times and places as they shall deem most suitable to the interests of the Association and its objects, and adopt such measures as they believe will most conduce to extend and improve a knowledge of bee-keeping throughout the County of Middlesex.

12. The Committee shall meet at least once in each month, and any three members of the Committee may, by a notice in writing to the Secretary, require him to call a Committee Meeting within three days after receiving such notice.

13. These Rules shall not be altered unless at a General or Special Meeting, which may be called by seven members of the Committee, or a written request of not less than twelve members of the Association; the Secretary shall give each member fourteen days' notice of the same, and state the object for which the meeting is called.

14. All propositions at any meeting shall be disposed of by a show of hands, but a ballot of the members present may be demanded by any three members in the room.

OBJECTS OF THE ASSOCIATION.

The Middlesex Bee-keepers' Association has been established with the twofold object of advocating the more humane and intelligent treatment of the honey bee, and of bettering the condition of the cottagers of the Middlesex County, by the encouragement, improvement, and advancement of bee culture.

AIMS OF THE ASSOCIATION.

As the funds of the Association permit, the Committee endeavour to carry out its objects by—

1. Assisting in the formation of the Middlesex Bee-keepers' Association in affiliation with the Central Society.

2. By the attendance of the Association's Experts with their Bee Exhibition Tent, at the Agricultural and Horticultural Shows in all parts of the United Kingdom, in which exhibitions are given of bee-driving, transferring, &c., accompanied with short and practical explanations of the best methods of bee-keeping.

3. By lectures, meetings, the circulation of suitable books, certificates, and sending out experts as qualified teachers and examiners of apiaries.

4. By establishing a honey market, and spreading a knowledge of the most profitable use and disposal of bee produce.

5. Holding an Annual Show of bees, hives, honey, and bee furniture.

A CORRESPONDENT asks if it is intended that the proposed Bee-keepers' Association shall include in its duties the finding a market for its members' honey and guaranteeing a certain price; stating that he has been informed that this is done by the British Bee-keepers' Association.

Our correspondent has, we think, been misinformed with regard to the British Association selling honey. If our memory serves us correctly, the committee appointed one of the Association's experts—Mr Baldwin—to act as agent for the sale of honey sent to him by any of the members. There was no fixed price, nor any guaranteed by the agent—he of course obtaining the highest he could, and deducting a small commission in payment for his services.

With regard to this matter in connection with the proposed New Zealand Bee-keepers' Association, we may state that shortly after the meeting we spoke to several bee-keepers that attended upon this particular subject, our idea being that honey depots or agencies

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should be established wherever most convenient for the sale of apiary produce belonging to the members of the association, the appointment of respectable agencies resting with the committee of the association. It was agreed to by all that this would be very desirable, and we have no doubt that as soon as the association is formed and a committee appointed, this subject will engage their earliest attention.

A LETTER FROM MR R. WILKIN.

We had for some little time been anxious to hear from our Californian friend Mr Wilkin, and believed that something unusual had occurred that prevented his giving the readers of the Journal the promised articles on "Bee-keeping in America." By the last San Francisco mail we received the letter given below, which fully explains the reasons for the delay. We are very sorry, indeed, to hear of the sad misfortunes that have occurred in California through the flood, and of the private losses of Mr Wilkin; though we trust that his Matilija Apiary has since been found to have sustained no damage. It is to be hoped that the coming honey season in California will be a highly profitable one, to enable bee-keepers to make up a little for their recent losses:—

San Buenaventura,
Ventura Co., Cal.,
Mr I. Hopkins. Feb. 23rd, 1884.

My Dear Sir,—I have been feeling very dissatisfied with myself for some time for not being able to fulfil my promise, and communicate something of interest in bee-culture for your Journal, especially as you had aroused the expectations of your readers to learn something of the progress of bee-culture in America. I had nearly got my honey shipped to England when I commenced hurriedly to build myself a new dwelling house before the coming honey season opened up; this, together with putting two new apiaries in order, kept me fully occupied. My care, labour, and anxiety has now been doubled by the result of a great flood which has occurred in Southern California. A few weeks ago we had begun to dread the prospects of another dry season; many of our bee-keepers were offering to sell their bees for a mere trifle on this account. However, on the 27th of January it commenced raining, giving us in twenty days 18in. of rain in the valleys, while in some places in the mountains double that amount fell, which culminated a few days ago in a disastrous flood.

Our people are located along the river bottoms and at the mouths of the mountain canyons, for the sake of water and good building sites; these are just the places that floods are likely to affect most. Our neighbouring town, Los Angelos, had 124 houses washed away. Much damage has been done all over the country; the telegraph lines, railways, and waggon roads have been so demolished, cutting off communication between different places, that at present we have no means of learning the extent of the damage done over the country. All around us was a vast expanse of water, rushing by in torrents, carrying large trees and rocks to the ocean, a mile below us. The water surrounded my new house, but did little damage to it; all my neighbours deserted their homes and fled to the hills. A Chinaman, after his house washed away, clung to a tree-top near by, but soon both Chinaman and tree washed down to the sea. My barn at the Sespe Apiary of 700 hives—pictured on the front of your Journal—was washed away with its contents, one half the dwelling house with its contents also, and one half my honey house, with many of the equipments of the apiary, including 600lbs of wax and foundation machine. A rock that I am sure 200 horses could not draw was washed down and landed in front of the honey house. My choice apiary of 300 hives, in the Matilija canyon, 21 miles from here, is all supposed to have swept past this place to the sea. But, even supposing it possible that they are there all right, yet it will cost from one to two thousand dollars to open a road to them again. Several families are shut in the canyon unable at present to communicate with the outer world. My business is thus so disconcerted that, unfortunately, I shall not be able at present to give the necessary time and attention to writing the promised history of bee-culture in America.

Later.—I have 800 hives left, and hope to have a good honey season, which I am sorry to learn you have not had in the past one.—Yours very truly,

R. Wilkin.

APICULTURE IN QUEENSLAND.

BY. C. FULLWOOD.

In my previous communication I stated, "we have been having a grand season, not too warm." Since then the weather has at times been excessively hot; for a while the honey flow ceased, which is frequently the case in January. There is a little coming in again now, the end of February. This will very likely continue more or less until April or May, after which there will most likely be a small quantity gathered during the winter. Latterly the weather has been more enjoyable. We have had a few showers, but not nearly so many as needed.

I was pleased to learn your success in obtaining queens from Italy. Safe arrival of 50 per cent. is not so bad, when we remember that previous to my successful introductions total failures had been the rule. No doubt C. Bianconcini strives for success; he is thankful for any suggestions that may aid in ensuring it, and is thoroughly deserving of the patronage of Australian bee-keepers.

It may be well, however, to obtain some yellow bands from other localities, in order to prevent too close breeding, and possibly secure a finer class of insects. Once we get the Italians predominant it will be advisable to work for a superior strain of them, and as it appears highly probable that the Cyps. and Syrians are of the same race, although condemned by Abbott, of England, as "truculent pests," it may be as well to introduce some of them, so as to secure unmistakeable fresh blood. For those who would prefer the most gentle bees, "Carniolans" might be secured. These, crossed with Italians, I understand, are really good bees, only they swarm so frequently; but for genuine go-aheads a cross from Italy and Syria, I believe, would shine. I am quite inclined to try Benton's favourites.

We must persuade our brethren of Australia to give us the benefit of their experiences through the Journal. Even the most simple results will many times prove valuable as leading to something. No doubt we all have much to learn, and a vast deal to unlearn; practical experience is the best possible teacher. The dogmatic assertions of ancient beemen are in course of confirmation or refutation. My Queensland experiences have quite upset many such—in some cases to my own discomfiture.

The other day a young neighbour on overhauling a rather weak stock, that had been weakened by dividing some time previously, came across two queens. Having informed me thereof, I went over to examine them, and found on one comb a laying queen—a com-

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paratively young one—and on another comb a young queen apparently not commenced depositing. I could not obtain any information that would lead to a solution; but I rather opine the young queen came in from her wedding to the wrong home, and was allowed quietly to perambulate the combs for at least three days to our knowledge. Being in want of a queen or two just then, we removed her to another abode.

We are taught that there is comparatively small risk in introducing newly-hatched virgin queens to queenless stocks that have been in that state for a few days. My experience is—and I have tried Root's, Alley's, and other plans—that I have signally failed in introducing virgin queens, and have been universally successful with fertilized ones. Root's plan with me has been a complete failure.

The other day my daughter called my attention to the fact that some of the bees appeared to be swarming; this puzzled me. I had just been among them, and had not discovered any preparations for such. On looking up the yard, sure enough, a swarm was on the wing; but where are they from? No signs of any exodus from any of the boxes; yet the swarm is small. Presently they began alighting on one of the boxes, and essayed to enter therein. "Hold on! here's a row! A little vagabond swarm of black rascals trying to jump an Italian claim." No go, the yellow jackets were too much for them. The queen, a virgin black, was balled at the entrance, and immediately caged. Hundreds of the niggers were demolished double quick by the Italian assegai, and the remainder of the swarm clustered around the caged queen until evening, when they were introduced to a weak hybrid stock, the queen decapitated, and all made quiet. A few days previously I had noticed quite a number of little black rascals reconnoitring these boxes, evidently looking for snug quarters, impudently imagining they could storm the citadel. Even then many received their quietus from the outpost of the yellow warriors.

I am using one of Cowan's Automatic Extractors, and I like it well, as it saves me a lot of time. It is an ingenious contrivance, rather more costly than ordinary ones.

[Our experience, *re* introducing virgin queens, corresponds with that of Mr Fullwood. We also have tried various plans, in all of which we have at times been successful, while at others our losses have been fully 70 per cent. It does seem strange that while a queenless colony will accept a queen just hatching if the cell is put into the hive before the queen has emerged from it, it will not accept a queen immediately after it has hatched. We have often, when introducing cells, found young queens half out of them; when we could do so, we have pushed them back, capped the cells again with a little wax, and put them in the queenless hives, when, probably, within a few minutes the queens would hatch and be accepted; but had the same queens been introduced immediately *after* hatching, in at least seven cases out of ten they would have been killed. The risk attending the introduction of fertile queens by the usual methods is very small, indeed.—Ed].

In the R.M. Court, Christchurch, a bee-keeper was sued for 10s damages, for trespass for following a swarm of bees on to plaintiff's premises. The Bench gave judgment for defendant, and remarked that plaintiff's refusal to allow defendant to take his swarm was unneighbourly."

For the N.Z. and A. Bee Journal.

All correspondence must bear the name and address of the writer, not necessarily for publication, but as a guarantee of good faith.

THE PRICE OF HONEY.

Sir,—I had prepared a reply to your answer to my note on the above subject in the March number of the Journal; but I believe you are likely to have sufficient material for April and May numbers without it, so I will hold it back for a little while, and merely say at present that the need for ventilating this subject is shewn by the fact that I now know of consignments of capital honey in beautifully filled pound sections, not an empty corner in the box, and every cell sealed (reserved samples were shewn me), which have been sold by different bee-keepers, at the following prices:—6½d., 7d., 8d., 10d. One of my friends had an inquiry from an Auckland merchant for as much as he could get, and he would give a little more than 10d.; but my friend is one of those few people who know exactly "how many blue beans make five." He had already sold at *a shilling* per pound section, and could have sold more at the same price. Perhaps the Bee-keepers' Association, with the assistance of the Bee Journal, will bring about a greater uniformity as to the price of honey.—I am, Sir, Yours, &c.,

Uncle Took.

[A uniform price for the various grades of honey in the different local markets is just what is required; it is ridiculous that prices for the same class of honey should vary so much as in the figures you quote. It is, however, an evil that will in time rectify itself. We are just now passing through the first stage of the bee industry, and our experience in this matter will, no doubt, be exactly similar to that of bee-keepers in other countries until our markets for honey are properly formed. The exchange of ideas and experiences between bee-keepers through the Journal, Bee-keepers' Associations, and Shows, will do more towards bringing about a uniformity of price in this article than anything else.

With regard to the price we quoted, viz., £40 per ton, of course, referred to extracted honey in bulk only; first-class comb-honey in 1lb. sections, delivered, we consider worth 9d. per lb., wholesale; of course, like everything else, when the demand exceeds the supply prices will rise.—Ed.]

WINTERING BEES.

Sir,—As winter will soon be upon us, I should like to see some expression of opinion from more experienced bee-keepers than myself in the Bee Journal as to the best way of wintering.

I consider a warmer covering is required than the ordinary mat, something light and porous. Chaff is used in America. No doubt, a cushion made of chaff, two inches thick, not stuffed too tight, laid over the frames, would do well. I think something of this

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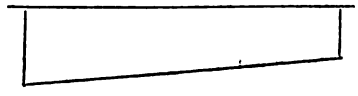
kind is necessary for the comfort and well-doing of our little friends during winter and spring. Although our winters are not so long and cold as they are in America, they are very much damper, which is quite as destructive to the bees. If bees are wintered warm and dry, with sufficient ventilation, which a two-inch chaff cushion would allow, they would consume less honey during the winter, and would be strong and healthy and well able to stand the damp and changeable early spring days when in search of pollen, &c.

Thinking some of our bee-keeping friends may require to feed up this autumn, I give you a description of a feeder I found very useful, easily manipulated, and very simple of construction, and above all very cheap. It is made by sawing the ends of a brood-frame to four and five inches respectively, thus—



Nail on the bottom bar, exactly the same as an ordinary frame except that one end bar is one inch longer than the other, and not so deep Now take two pieces the same length as the bottom bar, two inches wide by two-eighths of an inch thick (I use the bottom bars of the wide frames), and nail on with finishing nails to the side pieces and the bottom bar on each side. This makes a nice boat the same length as a frame, 1¾ inches deep, ⅞ inches wide; holding rather more than half-a-pint. Having one end longer than the other allows it to hang level when the hive has a fall—as it should have—to the front. To make it water-tight, pour some melted wax inside the boat, tilting it up and down until the corners are well waxed. To use it I hang it inside mostly on one side; if I have a division board in, I usually put it on the outside of the division board in the empty part of the hive; sometimes I use a thin strip of pine as a float to prevent the bees crowding in and getting drowned.

Last spring I had a number of these in use, and fed with syrup made of the best sugar. If it was at all chilly, I poured the syrup through a small funnel without moving the feeding frame by simply turning up one corner of the mat. To prevent the bees building comb on the bottom, I greased it well.—Yours, &c.,

E. Brightwell.

Wanganui, March 11th, 1884.

[We shall shortly have an article on wintering, but at the same time we should like to have the views and experiences of others. Wintering bees successfully in any part of Australasia is by no means a difficult matter. Briefly, the conditions to ensure success are—a strong colony at commencement of winter, plenty of food, and a warm, dry hive.—Ed.]

MAKING A COMMENCEMENT.

Sir,—I have been making an attempt at bee-keeping this summer, and have gained some experience which will, I hope, be profitable to me in the future.

At the commencement I had one swarm, which, in November I successfully divided into two Langstroth hives. Shortly afterwards it was shown to me by a friend that foul brood was in the hives. This was a great disappointment, but I set to work and shook the bees into new hives and fed them, according to the directions in the Journal of last July. It succeeded with one swarm, the other dwindled away and was lost. I boiled the hives to disinfect them, and I hope I have seen the last of that troublesome disease.

In December I had a fine swarm given to me. It has yielded about 70lbs. of honey during the last six weeks, besides throwing off two swarms, one of which I captured and hived, the other escaped. Another stray swarm I caught, but as it was a small one I soon afterwards united it with a not over strong hive. I learn from your instructive Journal that swarms transferred from boxes in the autumn have been successfully kept through the winter by feeding with candy, &c. I am going to try the same experiment, some of my neighbours have bees in boxes, and to save them from being destroyed I shall transfer them to proper hives. If it answers it will give me a larger stock to start with in the spring.

We have had some heavy rain lately, after five weeks of hot summer weather, during which the bees worked hard on the white clover, then blossoming in abundance. This rain will, I hope, bring us a good autumn honey harvest, to make up for the bad summer we have had.

H. P.

Waipawa, March 14th, 1884.

[We would remind our correspondent that by omitting to send his name with the above correspondence he has not complied with our regulations.—Ed.]

BEE-KEEPING NORTH OF AUCKLAND.—BEES KILLING THEIR QUEENS.

Sir,—By recollection and notes in my diary, I will give you (as you requested in your January number) the condition and particulars of our colonies when the queen-killing took place; and I shall be glad if you will point out the cause and a remedy:—

About the middle of September, 1882, weather very fine, and bees gathering honey freely from willows, damsons, peach, furze, gum trees, and bush flowers, we transferred 15 colonies to clean hives, which was all that survived the bad winter out of 36—the others died of foul brood, cold, and starvation. We found in nearly all hives (when transferring) a ball of bees, with the queens inside. Some of them were in such an exhausted condition as to be not able to walk, and as soon as we returned them the bees would rush at them and enclose them again. The remainder of the bees were running about just as they do the first day or two after losing their queens.

All colonies had plenty of sealed honey, but not much brood; the queens were all under 12 months old, but did not lay many eggs. About six weeks before it occurred we supplied them with sugar-candy, and placed wheatmeal in sheltered nooks, which they carried into their hives in large quantities; and we noticed that when the queen-killing was going on this mixture had fermented, and was running out of the cells, and the bees were trying to remove it. We cut as much away as was possible, which we thought had a good effect, as soon after they got round into their proper senses, but not before six colonies were minus of their queens.

The best of our honey season generally ends about the 1st of January, but this year, after a very indifferent season, the flow of honey suddenly ceased about the 22nd of December. We averaged nearly 30lbs. of

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comb honey each colony, but two out of three boxes were imperfectly sealed. This yield was without foundation until nearly the latter part of the season, when we used some for the first time, and were surprised how much more quickly they were filled up.

JNO. BECROFT, JUNR.

Port Albert, Feb. 8, 1884.

[We have no doubt about it being a case of robbing in each instance when your queens were "balled." The middle of September is rather early to transfer, unless you took the precaution to do it in some place where the bees from your other hives could not interfere. At this time, robbing is very easily started, and nothing is more liable to start it than transferring; it would have been better to have postponed the operation till two or three weeks later. When robber bees attack a colony, one of the first results is the loss of the queen; the colony then becomes disorganised, and the work of robbing becomes much easier to the robbers. A very handy arrangement to have in an apiary is a manipulating tent. It is made by covering a light wooden framework with mosquito netting; it need only be large enough to cover a hive and the operator, and allow a little room for transferring if required to be done at any time when robber bees are about. With the aid of this, the bee-keeper can open a hive at any time without fear of starting robbing; it is also handy to put over a hive attacked by robbers. We are sorry to hear that your are troubled with foul brood, and trust that you may succeed in eradicating it; in last issue we gave Mr T. W. Cowan's method of preventing the spread of this disease.—ED.]

FROM OUR CONTEMPORARIES.

THE OUTLOOK OF APICULTURE.

IN December last Prof. A. J. Cook read before the Michigan Bee-keepers' Association the following essay:

Before commencing a survey of the present status of our art, I pause for a moment to speak of an event which is of deepest interest to us all.

Need I say I refer to the presence among us of our honored and revered friend, L. L. Langstroth. * * *

A few years ago the cynics of our brotherhood told us that conventions were the enemies of our art, that they were worse than useless, and that to stimulate the growth of apiculture was to use the suicide's dagger. Now it is rare indeed to find a man so narrow as to disclaim against associations. While time has shown that with bee-keeping as with every other business, increased supply brings a much greater increase in demand, which is further made potential for good, by bringing the increased energy and intelligence which numbers are sure to give. The business that booms, is the one that has among its patrons the talent, the tact, the energy, and the genius of the country. Without conventions, we could not have inaugurated, and made successful our splendid exhibitions, which are sure to foster our art as few things can. Those States whose conventions are ablest and most frequent, are ahead. It is always so, with every art and at all times. County and district societies should send delegates to the State association, and the State to the Inter-State and National. Thus concerted action will be made possible; thus the thoughts and methods of the most progressive will become the property of the many. To be sure, we have our excellent periodicals, but they are only possible, as association inspirits bee-keeping, and, good as it seems and is to get the thoughts and methods of our able apiarists through the Press, it is not like personal intercourse, and word of mouth. Conventions are a powerful educator. No single bee-keeper becomes abler and better prepared to do his work well without benefitting the whole fraternity.

We increase our art only as success shows it worthy. I may praise our business with a voice that would do honor to an auctioneer, yet that will influence little unless my neighbours see evidence that the almighty dollar puts in an appearance. Those who are energetic, willing to work, intelligent and willing and eager to learn, observing, persevering and attentive to their work, will rarely ever fail in apiculture. Those who lack these qualities will be left behind before they get far enough to meet great loss; so little mischief is wrought even if some are induced to adopt this business, and because they lack the elements of success, fail. Usually they gain enough added intelligence to more than pay for the time and capital expended.

Another fallacy, as I think, which some few of our apiarists are loudly proclaiming, is that apiculture is only for the specialist. Why, gentlemen, our brothers in horticulture and agriculture are free to admit that they owe more, in the way of real progress and advancement, to amateurs than to specialists. I know that apiculture is no exception. Long, Demaree, Clute, and a host of others of our best bee-keepers, are amateurs. I am free to say that three-fourths of the honey product of our State is produced by men with whom apiculture is only an ovation. I can name a score of bee-keepers, whom I know personally, who are farmers, lawyers, doctors, who keep hundreds of colonies of bees, and many of whom, not only get large returns of honey, but winter each and every year with entire success. When our specialists are all equally successful, then they may cry hold! enough! with more justice.

An indication that the new recruits in apiculture will exalt rather than degrade the business, is seen in the fact that many are calling for instruction in this line. Few studies at our Agricultural College win more earnest study and real enthusiasm than does entomology, which embraces quite thorough instruction in apiculture. Last year we had a student from England, and this year one from Texas, who came especially for the bee-culture. The fact that Messrs. Jones, Heddon, and Clute have respectable classes, shows that there is a call for more knowledge. We can but wish God-speed to all of these gentlemen in their efforts. Special training is most desirable to the would-be apiarist. To be with such efficient bee-keepers for a season will give a vantage ground that can hardly be appreciated till enjoyed. The practical apiarist will be more proficient if he has had the science of entymology and physiology and other cognate studies, but if he cannot because of age or circumstance take so much time, let him by all means study and work for a season with some good apiarist. Such a course would never be regretted.

The past season has shown that we can procure nearly as much honey in small as larger sections. It would also seem that with the proper arrangement and care, we have no need of separators. That there will ever be call for

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METEOROLOGICAL OBSERVATIONS FOR THE MONTH ENDING MARCH, 1884.

(SUPPLIED BY T. F. CHEESEMAN, ESQ., AUCKLAND.)
AUCKLAND.

Month.		Barom. corrected (inches.)	Max. Temp. in Shade.	Min. Temp in Shade.	Mean Temperature.	Solar Radiation.	Minimum Temp. Exposed.	Rainfall in Inches
FEB.	{	30·13	69·0	56 3	62 6	131·1	49·2	2·85
	{	30·07			66·4			2·62

Remarks.—From 1st to 6th, fine, clear and bright, with light variable winds, barometer high; from 7th to 10th, showery, N.E. gale on 8th, shifting to S.W. on following day; from 11th to 18th, mostly fine, showers on 13th and 16th, wind variable, light; 19th and 20th, strong breeze from N.E., with occasional showers; 21st to 23rd, unsettled and showery, heavy thunderstorm on the 23rd; from 24th to end of the month, fine and clear, with unusually high barometer, reaching 30·70 on the 29th. Mean temperature still unusually low for the time of the year; rainfall slightly above the average; barometric pressure above the average.

We have to acknowledge receipt of a swarming box and a couple of frame forms from Messrs Bagnall Bros. and Co, Turua, Thames. The swarming box is ingeniously contrived, and will answer the purpose for which it is intended capitally—in fact, we had an opportunity of testing it at the Auckland Gardeners' Horticultural Show, and found it very handy indeed. The frame forms are of the usual size for making large and small frames. The above goods are manufactured by the firm in their usual first-rate style, and are supplied at very reasonable prices.

We would remind all those wishing to enroll themselves as members of the proposed New Zealand Beekeepers' Association, to send in their names and subscriptions at once to the acting-secretary, Mr H. H. Hayr, High-street. Auckland.

NOTICES TO CORRESPONDENTS.

L. Q. DE SOYRES.—We are now waiting to have photos. taken for our engraver. As soon as these are done we shall be able to give a sketch of the hive cramp and other appliances. We are living a long distance in the country, hence the delay in getting a photographer.

MR THOMAS AWDRY.—Your communication arrived too late for publication in this issue, but will appear in our next, together with full answers to your enquiries.

Messrs Bagnall Bros. & Co. request us to mention that the issue of their new price list has been delayed, owing to the non-arrival by last mail from America of several plates intended for it. It will be printed immediately after the arrival of the incoming mail and forwarded to all their customers, and any who have or will apply for it.

HONEY PLANT SEEDS.

WE have a limited quantity of the following Seeds FOR SALE, at One Shilling per packet, post free—Spider plant *(cleome pungens)*, Figwort *(scrofularia nodosa)*, Giant Mignonette *(reseda gigantea)*, Catnip *(nepeta cataria)*.

The above seeds are of this year's growth, and our own saving. A packet of each of the four kinds will be sent to any address in the Australian Colonies on receipt of 3s 6d.

I. HOPKINS,
Matamata Apiary.

HONEY MARKETS.

AUCKLAND, May 1st, 1884.

HONEY.—First-class honey, both comb and extracted, in good demand. Sales effected as follows:—Comb in 1lb sections, wholesale, 10d; retail, 1s. Extracted, in 1lb tins, wholesale, 7½d; retail, 10d; glassed, in 2lb jars, 8d per lb; retail, 1s; 60lb tins, wholesale, 6d.

BEESWAX.—Scarce; buyers for clean yellow, 1s per lb; dark, 10d to 11d.

H. H. HAYR, High-street.

AUCKLAND, May 1st, 1884.

The demand for good honey remains about the same as last month. The prices are as follows: Wholesale, 1lb tins, 7s 6d to 8s per dozen; retail, 1lb tins, 11s to 12s per dozen. Bulk honey, wholesale, 4d per lb; retail, 5d per lb. Extra fine, 6d per lb; in 1lb sections, from 7d to 9d per lb.

AUCKLAND AGRICULTURAL AND MERCANTILE CO., Limited.

ENGLAND.

Offered for sale by advertisement in *British Bee Journal* of February 1st, 1884:—

HONEY.—Pure extracted white clover, in 1lb jars, 1s each; 2lb ditto, 1s 11d. In 2lb, 3lb, 7lb, 10lb, and 15lb tins, 10d per lb. In bulk, i.e., 2cwt. cans, 10d per lb.

The value of honey imported into the United Kingdom during the month of December, 1883, amounted to £1260.—*British Bee Journal.*

AMERICA.

NEW YORK, March 10th, 1884.

HONEY.—White clover and basswood, in 1lb and 2lb sections, 17@18c.; dark and second quality, 15c.; extracted white clover, in kegs and barrels, 9@10c.

BEESWAX.—Prime yellow, 34@35c.

H. K. & F. B. THURBER & Co.

SAN FRANCISCO.

HONEY.—Not much choice honey offering, but there is an accumulation of off-lots, which are slow of sale. Prices are too high here to admit of exports to other markets. The outlook for the coming crop is very good. White to extra white comb, 15@18c.; dark to good, 10@13c.; extracted, choice to extra white, 7@8c; dark and candied, 5c.

BEESWAX.—Wholesale, 27@30c

STEARNS & SMITH, 423, Front-street.

—*American Bee Journal.*

SPECIAL NOTICES.

QUERY AND REPLY DEPARTMENT.—Correspondence for this department should reach the editor not later than the 15th of each month, when replies are required in the next issue.

Correspondence for publication may be sent at book post rates *i.e.*, one penny for every two ounces, providing the book post regulations are complied with, and the words "Press Manuscript" are written on outside of cover.

SCALE OF CHARGES FOR ADVERTISEMENTS.

Single Column.	£	s	d	Double Column.	£	s	6
Three lines	0	1	6	Page	2	10	d
Per line afterwards ...	0	0	6	Half page... ...	1	7	0
Inch of space	0	3	6	Third of page ...	1	0	6
Quarter column... ...	0	8	0	Quarter page ...	0	17	0
Half column	0	15	0				
Whole column	1	5	0				

DISCOUNT FOR SERIES.

3 insertions ... 5 per cent. 12 insertions... 20 per cent.
6 ... 10 „ 24 „ 30 „

P.O. Orders for Subscriptions, Advertisements, &c., to be made payable to J. C. Firth, Chief P.O., Auckland, and sent under cover to H. H. Hayr, High-street, Auckland, or P.O. Box 186.

ADVERTISING DEPARTMENT.—Advertisements for the next issue should reach the publisher by the 24th of each month.

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THE NEW ZEALAND AND AUSTRALIAN

BEE JOURNAL.

Devoted exclusively to Advanced Bee Culture.

VOL. I. No. 12.} AUCKLAND, N.Z., JUNE, 1884. {Published Monthly, Price Sixpence.

THE NEW ZEALAND AND AUSTRALIAN BEE JOURNAL

PUBLISHED MONTHLY.

I. HOPKINS.....Editor.
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Half-yearly " ... ... 3s.

Post free on day of publication.

On account of the Postmaster-General declining to register this Journal other than as a Magazine, book rates of postage are charged to places beyond New Zealand; consequently, we shall be obliged to charge 7s. per annum to foreign subscribers.

All correspondence intended for publication to be addressed to the Editor, Matamata, Auckland, New Zealand, and business communications to the Publisher, P.O. Box 186, Auckland, New Zealand.

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CALENDAR—JUNE.

WINTER appears to have set in unusually early this season; to experience heavy frosts in the month of April is very uncommon indeed. On three occasions in the early part of last month the thermometer here registered 12 degrees of frost and several times 6 degrees. The extraordinary and sudden fall in the temperature had the effect of at once cutting off all sources of honey and putting a stop to breeding. Weak colonies, unless the bees are crowded by division boards into a small space and supplied with plenty of food, will suffer very much. A supply of division boards should always be kept on hand ready for use when required.

All colonies should, ere now, have been fixed up for winter, but if any have been neglected they should be attended to at once as directed in last month's calendar. Where chaff cushions are used for covering the frames a snugly fitting mat should first be placed on them, as the cushions are liable to leave the corners uncovered. A very good substitute for a chaff cushion, that will be sure to fit nice and snug, may be made by tacking a piece of stout coarse scrim across the lower part of the inside of the cover and filling the space above loosely with chaff; or a half storey may be fixed up in the same manner. Feeding where still required ought to be got through as speedily as possible, and syrup for feeding should now contain much less water.

During the wet weather that may soon be expected, when outside work cannot be done, preparations should be made as opportunities offer for next season's work, by getting all the material in readiness. Timber for hives, frames, &c., should now be getting well seasoned and ready for making up. Those who obtain material from the manufacturers ought to send in their orders early and get it on hand. Combs stowed away should be occasionally examined for the bee moth larvæ, and as soon as detected the combs fumigated with sulphur. We would strongly advise the use of the salicylic acid solution given in our April number, for painting the insides of hives, &c., before being stowed away, as a preventitive of foul brood.

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END OF VOL. 1.

With this number will close the first volume of the New Zealand and Australian Bee Journal, and it is extremely gratifying to us to know that—as an exponent of advanced bee-culture—it has been so thoroughly appreciated. Since our first number we have been continually receiving communications from our readers, scattered over various parts of the world, testifying to the appreciation of our efforts to promote scientific bee-culture. The encouragement received from our correspondents has considerably lightened our task—which to us is a labour of love—and enabled us to overcome many difficulties inseparable from the establishment of a journal devoted to a special occupation. To those who so kindly and willingly came forward and assisted us with their valuable contributions, we cannot sufficiently express our gratitude; for whatever position the Journal has attained is largely due to them. To our subscribers and friends we tender our sincere thanks, and promise on our own part to try to do even better in the future than we have done in the past.

On glancing through the contents of the present volume it will be seen that the information conveyed through its pages embraces all branches of advanced bee-culture suitable both to the beginner and the advanced apiarist. Our calendars and editorials contain the most useful and timely instructions, while our special articles have been contributed by careful and experienced writers, the subjects chosen being both highly instructive and interesting. The general correspondence, with Editorial foot-notes, embracing as it does the experience of many individuals, conveys facts which will enable the reader to determine how best to proceed in his own particular case. The matter gleaned "From Our Contemporaries" is of the most valuable kind, being chosen with the view to give our readers the ideas and practice of the most learned and practical apiarists of the age. And last, though not least, our answers through the "Query and Reply" department have, we hope, been the means of preventing many from falling into the errors of management that have been the cause of our correspondents asking for advice.

It is scarcely necessary to say that in the coming volume we shall do our best to make the Journal even more useful and interesting than hitherto. We shall devote all our energy to the advancement of the honey industry generally, but more particularly in Australasia; nor shall we rest contented until we have raised it to that standard which, as dealing with a healthful and God-given product, it so richly deserves.

To aid us in this work, we would ask all whose subscriptions expire with the present issue to renew them *at once*, as we cannot afford to lose a single one. Not only do we ask this, but we earnestly request that they will do all in their power to obtain new subscribers, bearing in mind that the more readers we have the more rapidly will the industry develop. It is not much to ask that each obtain one new subscriber, and if this were done it would be of material assistance to themselves and the Journal.

New subscribers can obtain, if they wish, all the back numbers of the Journal from its commencement.

APIARY ASSISTANTS.

With the development of apiculture in the Australasian colonies will come the need of skilled assistance in the apiary; in fact, this want has already been felt. We know of two or three persons who were, some little time ago, quite prepared to go into bee-culture on a large scale could they have depended upon getting assistance when required. We also know of several apiarists who are likely to require trained help next season, and if this is not to be obtained it will probably result in a serious loss to them. At present we do not know of any one person in the colonies having a knowledge of bee-culture, that is open for hire, nor do we think there is likely to be any under the present circumstances for some time to come. This being the case, it behoves us to take the matter into consideration without further loss of time, and find out how we may best supply the want.

In some countries on the continent of Europe—we have been informed—bee-culture is taught at the public schools, and therefore forms part of the national education, so that every boy on leaving school has at least some knowledge of it. In America, apiculture forms a part of the course of studies at the various agricultural colleges, and in addition to this several of the leading apiarists take respectable young men, termed "student apprentices," for the season, teaching them all branches of bee-culture; but upon what terms we are not aware. Certainly, some system for turning out young men proficient in the business should be inaugurated here, and of the two given, the American would best answer our purpose in the meantime. No doubt if the matter were properly represented in the right quarter by an influential body of bee-keepers like, we may suppose, the proposed Association will be, apiculture would be introduced, and form part of the studies at our agricultural colleges. Then again, with regard to taking "student apprentices," we believe that several apiarists might be found who would be willing to take one or more if suitable terms could be arranged. Mr James Heddon, one of America's foremost apiarists, was, we believe, the first to introduce this system, and it has worked remarkably well. At the commencement of the season he takes on several respectable youths or young men, and after putting them through the various branches of the business under his own superintendence, as they become capable gives them charge of a small apiary. Mr Heddon considers that with his plan an intelligent youth, after a season's apprenticeship, should be competent to perform any part of the work of an ordinary apiary, or even to take entire charge of a small one.

We do not know of any occupation more healthy, profitable, or elevating, that a youth could be put to than apiculture. Under a proficient tutor, the business can soon be learnt; there is no laborious work attached to it, requiring only smartness and attention. No confinement or crouching behind a desk, but open air, health giving work of the most interesting nature. Apiculture, as an occupation, is growing in importance rapidly. The estimation in which it is now held may be gathered from the statements of Professor Cook, in his essay given in our last issue, to the effect that he had students in his college from England and Texas, who came specially to study bee-culture. If the student

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system can be satisfactorily introduced here it will supply a want that will otherwise soon be seriously felt, and be the means of training some of our youth in a business that will enable them either on their own account or in the employment of others, to earn a respectable livelihood.

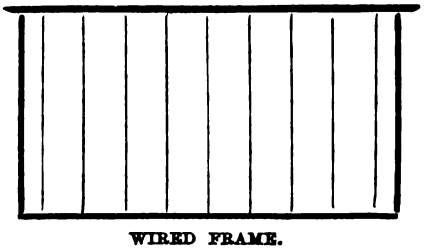
Since writing the above, Mr J. Barkley, of Westport, enquires whether we know of any person we can recommend to take charge of an apiary. These inquiries are becoming more frequent every season, thus showing the necessity of doing what we have proposed, *i.e.*, taking steps to provide skilled assistants.

WIRED FOUNDATION AND WIRED FRAMES.

It appears to be the opinion of those who have given wired foundation a fair test that the advantages gained by its use more than compensate for the extra expense and trouble in making it. We have watched the progress of it in America, where, of late, it has come largely into use; and from the many expressions of approval of those who have adopted it, we are led to believe that it will, in time, come into general use.

As soon as a demand sprang up for wired foundation in America, a Mr Given invented a machine by which sheets of wax are pressed into frames already wired for the purpose, and at the same time giving the sheets the ordinary impressions of the base of the cells. Several manufacturers at once commenced making and selling frames of wired foundation, but it was soon discovered by purchasers that this method of obtaining it was too expensive, as in packing, one frame of comb would occupy nearly as much space as 1½lbs. of ordinary foundation, consequently the freight on a few sheets of the wired article came very heavy. It was also found that many of the sheets broke away from the wires in transit through rough handling. The method now generally adopted by bee-keepers is to purchase the ordinary foundation and wire it themselves. This is by far the cheapest and best plan, and the one we would advise those who desire to use wired foundation to adopt.

Wiring Frames.—To accomplish this with the least trouble the tops and bottom bars should be bored before putting the frames together. The holes should be exactly in the centre of the bars, and two inches apart, commencing one-half inch from the end bar of the frame. They may be very small, as the wire used is of a very slight gage. The number of holes required in each bar is nine, and these can be all pierced at one time by using a set of small, sharp steel awls set firmly into a lever press. The wiring must be done after the frames are put together, using No. 30 tinned wire. A small tack driven in near the end of the top bar will do to fasten one end of the wire, the other end must then be rove through the holes, as shown in the fig., in one continuous length, and



WIRED FRAME.

the other end fastened in the same manner. Care should be taken when tightening the wire that the frame is not bowed or drawn out of shape. After the length of the first wire is ascertained the remainder may be cut ready for use. For putting the foundation in the frames. a board is required a little larger than the frame. On to this screw a second board just slightly smaller than the inside dimensions of the frame, and three-eights of an inch thick. The grain of the two boards should cross each other to prevent warping. The board if properly made will not reach the wires when a frame is placed over it by a sixteenth of an inch. The sheets of comb should nearly fill the frame, within (say) an eighth of an inch all round, and be slightly warmed. Lay a sheet of foundation on the board, and place a frame over it; now embed the wires by hand—a handy little instrument for this purpose is a small button-hook, having a grove cut in the under part of it with a file. If this is placed on the wire and moved backward and forward a couple of times it will embed the wire in the centre of the sheet. Some embed wires in the foundation without using the wired frames, but we can see very little advantage in this over the ordinary foundation; to reap the full benefit the frames should be wired.

PREMIUMS FOR NEW SUBSCRIBERS.

In order to encourage the obtaining of new subscribers, we offer the following inducements:—To any person sending us the names of four new subscribers, together with their own and subscriptions (30s.), we will send them a copy of the second edition of the "N.Z. Bee Manual" post free. For eight, and their own (54s.), a copy of the "Apiary Register" for 50 colonies, post free. For twelve, and 72s., a copy of the Journal free.

We have received a copy of Messrs Bagnall Bros. and Co.'s new Circular and Price List. It is a very neatly got up pamphlet of 24 pages, and contains besides the the prices of all the articles supplied by the Messrs Bagnall, a number of practical suggestions by Mr L. J. Bagnall, one of our valued contributors, and an enthusiastic and experienced beekeeper. The price list will be sent to all the firm's customers and to any other person making application, free of charge.

Nautical Bees.—The *Westport Times*, of March 25th, 1884, states that, "Some weeks ago, while the schooner Dunedin was on one of the slips in Lyttelton a small colony of bees established themselves in her stern frame. She has since been on a voyage to Stewart's Island, but the bees may still be seen in their most unusual dwelling-place, though, of course, in somewhat diminished numbers. In habits these nautical bees conduct themselves as do their shore-going brethren—'improving each shining hour' by day, and at night returning to the vessel."

It is known that there are times in some seasons when the flowers will secrete honey in abundance, at other times very little or none at all. It would be interesting to understand the conditions that produce it; whether the elements are in the earth or atmosphere? Who knows but that some day we may control this, as the farmer increases his crops by the use of proper fertilizers?

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A HOME MARKET FOR HONEY.

BY T. J. M.

NEARLY all writers on the subject of marketing honey lay down the maxim, "See that your home market is fully supplied before looking for a more distant one." The principle is undoubtedly quite correct. As yet, however, there can scarcely be said to be such a thing as a home market for honey in New Zealand, and it is a question requiring prompt attention and the best consideration of bee-keepers how can such a market be created and developed?

Honey has not heretofore been produced in the colony in such quantities, and brought within reach of the public at such prices, as would make it possible that it should become an article of general consumption; and until that is the case we cannot look for the operation of the economic laws of supply and demand, which tend to fix market rates. Comb honey has always been prized as an article of luxury for the breakfast table, and those who can afford luxuries have always been willing to buy it in small quantities, when offered for sale in good condition, even at a high price. The enterprising bee-keepers of California made us first acquainted with extracted honey made up in an attractive form, in glass jars or in tins, but still at prices which were sufficiently high to make it retain its character as an article of luxury. Fortunately the modern system of improved apiculture has now been introduced amongst us, has taken root in a soil and climate so highly favourable to its success, and there can be no doubt that it must soon become a very important branch of industry. The New Zealand bee-keepers will soon find themselves in a position to produce honey of prime quality in any quantities that are likely to be required for home consumption, and at a cost which will admit of its general use as an article of food. It will take some time before the public can become thoroughly alive to this fact, and before the people shall have accustomed themselves to look upon honey as one of the ordinary wants of every household, and to apply it to all the uses for which it is peculiarly fitted. Whenever this takes place the quantity of honey required for consumption must be, as I hope to be able to show, very large—so large indeed that there should be little necessity for seeking an outlet by means of export, no matter how great and how rapid the increase of production may become. It rests mainly with the bee-keepers themselves to facilitate the advent of this satisfactory state of affairs by taking the proper measures for placing their products in the best condition, *within easy reach* of the consumers, and at such prices as will insure their use by people of all classes. With this object in view, a spirit of intelligent co-operation between all bee-keepers—for their mutual benefit as well as for that of the public—is most desirable; and it is to be hoped that an energetic action in this direction will be amongst the first fruits of the formation of the New Zealand Bee-keepers' Association.

Comb-honey will probably always be preferred for table use. Although the honey when freed from the wax is undoubtedly purer as an article of food, still there is an attraction for the eye about virgin comb which will secure the preference of those who can afford to pay a higher price for it, as they must always expect to do. It is more expensive to produce, because hives worked for section honey can never yield as much as those worked for the extractor; more expensive to pack and place on the market: and as it must, as a rule, be retailed in small quantities, the price must include a fair remuneration for the retail seller. It is, therefore, in the shape of extracted honey that we must look to supply the general consumer. Making use of all the modern improvements in the working of his apiary, the bee-keeper can now produce honey in greater quantities, and consequently at a cheaper rate, as above-mentioned, by working with a view to extracting only, while the honey so produced and prepared is in a perfectly pure state, free from any particle of wax, bee-bread, dead bees, or larvæ, and in the best form for transport, for keeping, and for application to all the purposes for which it is suited. In this form it is possible to bring it into consumption at a price which will recommend its use on grounds of economy as well as taste. We all know the many virtues of pure honey in a sanitary point of view, and in how many ways it can be used with advantage instead of sugar, treacle, syrups, butter, &c.; but it is idle to expect that it will be used for these purposes in such quantities as it might be, unless it can be procured as easily, and at the same or nearly the same cost, everthing considered, as those other articles whose place it is to take.

There need be no hesitation in asserting that the honey can be produced now at a price which will admit of its being brought into general consumption on such conditions, provided proper arrangements be made which will prevent the consumer having to pay more than is absolutely necessary for the packages containing the honey, and for the profits of the dealer or dealers through whose hands it has to pass. The producers will have to consider how such arrangements can best be made; in what sort and sizes of packages the honey, carefully graded as to quality, can be most conveniently put on the market for wholesale and for household use; how the wholesale market can best be supplied, direct from the apiaries or through some well-know agent in each town or district; and how the retailers, who deal at present in such articles as sugar, treacle, syrups, &c., can be convinced that it is in their own interest to deal in the same manner in honey, without increasing the cost to the consumer by more than such a moderate amount as will afford them a fair and reasonable profit upon considerable quantities and quick sales.

If all this could be accomplished there can be little doubt that the home demand for honey would be very large indeed. The consumption of sugar in New Zealand is stated to be more than 50 lbs. per annum per head of the population. When we consider how much of this must be used for purposes which would be better served by honey, as the preparation of various sorts of puddings, cakes, and other sweetmeats, the making of some sorts of jams and preserves, the cooking of fresh fruits for table use, &c., it is not too much to assume that for, say one-tenth of the quantity, or 5 lbs. per head per annum, honey might be substituted. An equal quantity might easily be substituted for the use of butter (in some cases), of treacle, syrups, and jams, so that an average consumption of 10 lbs. of honey per annum per head of the population would appear to be a moderate calculation. An ordinary family of five persons could surely, with advantage to their health and comfort, consume as much as *one pound of*

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honey per week, or 50 lbs. per annum. Yet to produce the necessary quantity for such a consumption would put the energy of the bee-keepers to the test for a long time to come. The city of Auckland (with its suburbs) contained 47,000 inhabitants last year, has now probably over 50,000, and is rapidly increasing. To supply it would require 500,000 lbs. of honey; and if we take an average apiary to consist of 100 hives, producing 100 lbs. of honey per hive per annum, it would take 50 such apiaries to supply Auckland alone if the consumption were brought up to the rate assumed.

Bay View Apiary, Katikati.

(To be continued).

THE BENEFITS OF ASSOCIATIONS.

L. J. BAGNALL.

In apiculture as in almost every other occupation, there is much to be gained by union and legitimate co-operation on the part of those engaged in it. All that we know on this subject is the sum of the experience and investigation of the individuals who have worked with and studied the habits of bees. How little we would now know, and how slow would be our progress, did each individual keep secret to himself his discoveries and experiences. Had Huber, Langstroth, Dzierzon, Quinby, Cook, Newman, Cowan, and many others acted on this principle, what would have been the position of the bee-keeping industry to-day compared with what it now is?

In New Zealand, although we have the advantage of the writings and experiences of these men, still there are so many circumstances of climate, flora, and locality differing so widely from anything treated of by them, that we have very much to learn before we can ensure that measure of success which will crown intelligent and well-directed efforts.

The Bee Journal affords one of the best means possible for disseminating the experience and research of those engaged in apiculture, and in this way constitutes its readers and contributors into a "mutual improvement association." To supplement the Journal, an institution which will afford opportunities for personal interchange of ideas and exhibitions of skill in manipulating, and many other matters of peculiar interest is needed. The formation of associations has supplied this want in Great Britain and America, and will doubtless do so in New Zealand.

Already a number of questions of importance are agitating the minds of many bee-keepers, but probably the finding of a market for honey is just now in the front rank. Notwithstanding that the crop this year is small, there are some who complain that a market is not easily found for what is on hand. This is not surprising in the case of a new article intended for daily use. The British Bee-keepers' Association provides facilities for obtaining a market for the honey produced by members, but I do not think it would be advisable for the New Zealand Association to attempt this at present at least. It could do good work, however, in showing how the wide margin which exists between the amount received by the producer and that paid by the consumer can be reduced. Bee pasturage is probably the most important of all the questions which can interest the bee-keeper. It has so many points which require attention, such as plants to yield continuous pasturage; plants that produce honey as well as profitable fruit; trees that afford shelter and ornament as well as honey. To ascertain these and the best way to cultivate them, is a very interesting study—full of importance to all. Another work that occupies the attention of the British Association is the sending of experts through the rural districts, giving practical instruction in the use of modern appliances, queen-rearing, manipulating, and the general work of the apiary. A few of these would be very useful in this country. The holding of shows of bees, honey, etc., necessitates one very important item, viz., competent and impartial judges. It is imperative that this matter should have attention before another show is held. Unless exhibitors have confidence that the award will be made by men acquainted with the subject and thoroughly disinterested, great dissatisfaction will prevail, and but few will be found to submit their goods to the judgment of incompetent or prejudiced judges. In exhibitions of every kind it is always difficult to obtain competent judges in a show of bee-keepers' productions. New Zealand is no exception in this respect, and probably the Bee-keepers' Association will have no more difficult duty to perform than to provide such. I trust that the importance of these questions and many others, which must engage the attention of the New Zealand Bee-keepers' Association, will be sufficient to induce a very large number of bee-keepers of the colony to enroll themselves amongst its members.

[The subject touched upon by our correspondent, Mr L. J. Bagnall, viz., the reduction of the wide margin now existing between the amount received by the producer for his honey and that paid by the consumer, is of vital importance to the industry. There is no reason why the shopkeeper or merchant should expect such immensely large profits on honey as those pointed out by "Dunoon" in this issue. It is a saleable article and one that will, with ordinary care, keep for any length of time without deteriorating in value; why, then, should the retailer look for more than the ordinary profits of his business on this particular commodity? We are still of the opinion that one of the best means of rectifying this evil will be by the establishment of respectable agencies as soon as required in all the large centres of population. We shall be prepared to explain our views on this matter when the proposed Association is formed.—Ed.]

AUCKLAND PROVINCIAL BEE-KEEPERS' ASSOCIATION.

The first annual meeting of this Association was held on Saturday, 26th April, in Mr Buchanan's Hall, Pukekohe. There was a very fair muster of members, and the chair was occupied by Vice-President Capt. Jackson, who explained that the special business before the meeting was, according to rule 18 of the Articles of Association, the election of the President and other members of the Executive Committee. The Secretary reported that the Association, considering the short time that it had been in existence, was in a very satisfactory condition, there being nearly forty members besides others of whose intention to join he had received intimation. The Treasurer reported that he had funds in hand amounting to £5 5s. The following gentlemen were then elected to office for the ensuing twelve months:—President: Capt. Jackson, R.M.; Vice-Presidents: Messrs R. Hobbs, M.H.R., and J. Brown, Puriri Park; Executive Committee: Messrs Bevan, Kemp, Mayo, Morgan, Shadwell, and Smallfield.

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Authority was given to the Secretary to purchase the necessary books and stationery, and members who had not paid their subscriptions were requested to do so without delay. The Secretary then read the following paper by Mr Mayo, Drury, upon—

HONEY-PRODUCING TREES.

Mr Chairmen and Gentlemen :—It has occurred to my mind several times lately that Government might, at very little if any cost, do a great deal for New Zealand bee-keepers were they in their official capacity to obtain from the other Australasian Colonies information regarding their most useful and hardy honey-producing shrubs and trees I say trees because I consider that in many respects they are valuable in our country for bee-pasturage. Once established, they require no further trouble from the cultivator, and, if of evergreen tribes, would serve a treble purpose, *i.e.*, produce honey, give shelter, and be ornamental. I would direct your attention to the easy manner in which the Government can obtain seeds—generally from the botanical departments of other Governments for the asking. O.P.S.O. is the "open sesame" *re* carriage, &c., and were the secretary to any Bee-keepers' Association in New Zealand supplied with the seeds of such trees as I have mentioned, I know of no better plan for their dissemination, in order to insure proper care and treatment for their acclimatisation, than giving them to a bee-keeper. The best sign of a thriving, industrious, careful person is, in my opinion, a row of bee hives in his garden ; in my travels through life—and I have travelled pretty extensively,—I have always noticed that a well-kept apiary has ever denoted comfort and industry in that home. It is impossible to keep and care for bees in a favourable place and not copy their diligence and patience in gathering up stores for "the rainy days to come." The next step for Government in the right direction would be to appoint a person or persons to travel the country annually at the proper times to sow clover and such like seeds on Government lands wherever fires had run through them in March or April, any settler's written information being sufficient notice that such fire had occurred. This system would not only give A1 bee-food, but would also so enhance the value of the land that Government would reap cent. per cent. or more on the outlay incurred ; it would also tend to the destruction of those abominations to bees and bee-keepers, viz., non flowering plants—particularly ferns—more than anything else I know of, by attracting cattle to eat and tread them down. When I think of the liberality of our Government in fostering other industries by giving bonuses to them—for example, the iron, cheese, tobacco, fish-curing industries, and many others,—I do think that if we were to ask them to carry out such a programme as the above we would not be asking for more than has already been granted to others. Gentlemen, the choicest exotics which grow in your neighbour's garden yield up their sweets to the bee as readily as the wild flowers, and it is no robbery to send your bees over the fence to gather honey from every opening flower. Keep bees where there are plenty of people to keep flowers, and persuade everybody to grow flowers.

A vote of thanks was accorded to Mr Mayo for his paper, and it was agreed that, in order that the subject be fully ventilated, the members decided to take "Bee Pasturage" as the subject for next meeting, the discussion to be opened by a paper from Mr Beloe. Messrs Shadwell and Robinson, of Northcote Apiary, exhibited and explained a Woodbury Combination Hive of their manufacture. Its points were well examined and discussed, several members deciding to give it a trial next season alongside the Langstroth, as they were not convinced that the latter is verily the *ne plus ultra* hive. A vote of thanks to the Chairman terminated the meeting.

Members at a distance unable to attend are invited to express their views on "Bee Pasturage" on paper and forward them to the Secretary in time to be read at the next meeting of the Association, which will be held at Pukekohe on Saturday, 28th June.

For the N.Z. and A. Bee Journal.

All correspondence must bear the name and address of the writer, not necessarily for publication, but as a guarantee of good faith.

REMOVING BEES.

Sir,—On the 3rd inst. I found that robbers were at work in my No. 4 hive. On the 6th inst. I examined it, and found the bees had left ; and as there was pretty well of honey in five or six frames I closed the entrance with perforated zinc. Last Thursday a neighbour told me that she intended to brimstone some bees, so I agreed to take the honey if she would let me have the bees. On Good Friday I went in the afternoon, armed with a goose wing, a smoker, presented to me by Messrs Shadwell and Robinson, Northcote Apiary, near Auckland, (brown paper was the fuel) and, I must say, it did its work better and is stronger made than my "Bingham," from America,—a bee-veil, a knife, (formerly used for cutting comb out of straw skeps, which cuts sideways or up and down), I was able to get the comb out nearly whole, and one of my swarm-boxes to bring the bees home in. I found the bee-boxes were placed on the side of a hill at an angle of 35 to 40°, with no attempt at a level foundation ; two of them had been brimstoned, but not effectually. I shook out the few bees in these boxes, and put my swarm-box over them, which they soon entered. I then took No. 1 stock and drove the bees into an empty box ; then shook out the bees and placed the swarm-box over them. I cut out the comb, putting it into a milk-pan and covering with a cloth. Now for No. 2 stock : I drove the bees into the empty box, then shook them out and placed the swarm-box over as before. I never previously saw combs in a hive like these, for they must either have been softened by heat and fallen about, or the box had been shaken and the comb twisted in such a manner that the bees must have felt ashamed of their labyrinth of comb which I cut out and put in the milk-pan. I had purposely left No. 3 stock for the last, as there seemed so many boxes attached to it. I laid hold of the top board, three to four feet long ; the centre box came with it, leaving two collateral boxes, with some bees in each. The top board was nailed down. Off it came, and there were two entrances, one at the front and another at the back, close under the top board. Evidently this box had one day been the other side up ; the comb was fastened to the bottom. This box rested on another, but not connected. One piece of comb, full half size of the box, lay flat on the tops of the others. That I removed, but had great difficulty in driving these bees into the empty box. Eventually they were added to the swarm-box now *full*. I cut out of this a mass of comb ; it was all sizes and shapes. It was now six

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o'clock. I put a cloth on the ground, and placed my box of bees on it, brought up the corners, tied a string round the cloth, and started for home, near a mile and a half, with a long, steep hill before me. I was warm when I got here, but at once cut the string and laid the cloth up to the entrance of my No. 4 hive; then shook out the bees close up, but could not get them in to my satisfaction. On Saturday morning there were as many bees under the hive as in it. I brushed them out, and caught sight of a queen, too late to catch. Soon after the sight of a ball of bees, near the size of a walnut, told me she was there. I put it into the hive, and soon heard a buzz of joy, and the bees began to enter. On Sunday morning again there was a mass of bees under the bottom board. I moved the hive and bottom board carefully, put a clean bottom board where the hive had been, replaced the hive on it, took off the cover, rolled the mat to one side, "as I do when putting in a swarm," turned up the old bottom board, and swept the bees on to the top of the frames, replaced the mat, then the cover. To-day (Monday) the bees are in full work and carrying in pollen. I expect this is now my strongest stock. I cannot conclude without telling you how a girl about twelve years old, dressed in an old bee-veil, and a pair of her brother's breeches under her usual dress, with a pair of old woollen gloves on, helped me in driving and attended to my wants. She was as brave and fearless as any man I ever saw doing the same work.—Yours respectfully.

J. NEWLAND.

Ngarota, April, 1884.

[We are very pleased to think that you have been the means of saving the bees and preventing an act of cruelty.—ED.]

TWIN BEES IN QUEEN CELLS.

SIR,—It may not be new to you or your readers, but I have never seen the fact recorded, such as I noted during the past season: In opening some queen cells nearly ready for hatching, I found in one of them two worker bees quite perfect to all appearance, but dead. I have opened a great many queen cells, but never saw the same thing before. I decided at the time to inform you of it, and now do so as a matter of some interest to yourself and the readers of the JOURNAL. Has anyone else seen the same.—I am, &c.,

L. J. BAGNALL.

Hape Apiary, Thames, May 8th, 1884.

[We have come across many *apparently* unhatched queen cells containing dead worker bees during our queen rearing experience, though we do not remember having seen two in one cell. Strange as it may appear to a person on first making the discovery, we believe it can easily be accounted for in the following manner: Some queens when emerging from the cell do not gnaw the cap far enough round to allow it to hang down, the consequence is that after pushing their way out the cap flies back into its place or nearly so; before it quite closes a worker makes its way in and cannot get out again—the cap in the meantime having closed. The worker is now entombed and dies. We were many times deceived at first through the caps flying back, as we thought the young queens had not hatched, but we always look for this now.—ED.]

THE PRICE OF HONEY.

SIR,—Your note of explanation as to your valuation and your expression of opinion on the above subject are so thoroughly in accordance with my own views that it is now unnecessary to forward the communication promised in the May number of the JOURNAL, but I would like to direct the attention of your readers to one little item in connection with it which deserves consideration. Mr Hayr, in his quotation (1st of May) gives 10d. as the wholesale price and 1s. as the retail price of 1lb sections, but an enquiry at one of the leading grocery establishments in Queen-street elicits the information that the price of a 1lb section is 1s. 3d. Now, Sir, I am informed by a member of the Auckland Provincial Bee-keepers' Association, who is pretty well posted on the subject, that these identical sections were bought from Mr Hayr for 10d., price stated in Mr Hayr's report. It will thus be seen that 50 per cent. is the remuneration which a Queen-street grocer thinks reasonable for wrapping in paper a 1lb section and handing it over the counter. I think 25 per cent. would be more like reasonable, and as the section is evidently worth 1s. 3d retail at the present time, the bee-keeper ought to receive 1s., less of course the commission to Mr Hayr, and I would urge upon every bee-keeper who has sections to sell (there are unfortunately not many of them) to hold on and stick up for the shilling. Let us during the next six months consider seriously the idea of starting a retail honey depôt either in connection with a Bee-keepers' Association or not; the above shews that it is needed.

UNCLE TOOK.

BAY VIEW APIARY, KATIKATI.

SEASON 1883-84.

A REFERENCE to the Meteorological Observations published in the late numbers of the BEE JOURNAL, will show clearly the exceptional character of the past spring and summer, which we have all found so unfavourable for the production of surplus honey, and will give a good illustration of the influence of climate upon the working of an apiary, and the importance to the bee-keeper of recording and comparing such observations. A cold and wet spring and early summer (the monthly mean temperature showing a deficiency, varying from 1½degs. in October to 3½degs. in December, while the rainfall in October and November was one-fourth, and in December one-half in excess of the average), was followed by a still greater deficiency of temperature (over 5 degrees) in January and February, with only one-half the usual amount of rainfall. The commencement of the swarming season and of the honey harvest, fell at much later periods than usual, and the latter was of shorter duration and less productive than might have been expected. In this neighbourhood we extracted for the first time on the 15th December, and for the last time on the 18th March, four-fifths of the season's surplus honey being taken in January and February; while in the preceding season we took more or less honey from October to April, both months inclusive, four-fifths

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of the whole being taken in December and January. On the other hand, the season just passed has been favourable for increase of stocks. The swarming period lasted three months, our first swarm being taken on 1st November, and the last on 31st January. A good deal of the honey crop was taken this year from thistles and dandelion, as well as white clover. The two former flowered profusely, and the last one moderately, in January and February. There was a second bloom of all three in March, but although the bees were busy on the blossoms in that month, they did not lay by much surplus honey.

We passed through the winter of 1883 with 28 stocks without any loss, but during the spring six of them showed to be so weak that it was thought necessary to unite them with others, and we commenced the season with 22 stocks.

The total quantity of surplus honey taken was 1656 lbs., of which only 59lbs. were comb honey. This gives an average of 75lbs. for each of the 22 stocks, with an increase from 22 to 40. Five of the best stocks gave an average of 131lbs each, with increase from 5 to 13. Four of the worst gave only 24lbs each, without any increase. One of the five gave 147lbs, and increased to three; another 140lbs., and increased to 4. These are all black or German bees. We have recently received from Mr Hopkins a colony of Ligurian bees which, thanks to the admirable mode of packing adopted, arrived in excellent condition; and we hope to be able next season to compare the results obtained from each of the two races.

T.J.M.

FROM WESTPORT APIARY.

Sir,—The nucleus colony of Ligurian bees arrived about two weeks since; it is a very strong one. There was brood in all stages, and the queen has commenced laying since. I intend to unite them to a colony of blacks to-day. They (the Ligurians) were twelve days on the passage from Onehunga, owing to missing the steamer. Had they have come by the Hawea, as Mr Hayr thought they would, I would have had them in five days.

The full colony you first sent me is now very strong. I have raised four queens from it; two are fertilised and two are about ten days old. I suppose there is very little chance of them getting fertilized, as I have no drones or drone brood in my hives. The Ligurian queen you sent with the full colony has ceased laying, and she appears to be much shorter and smaller than when she was laying. This colony seems to be much more inclined to be cross than my blacks. I always put on the bee-veil, but sometimes get a few stings on the hands. I have been feeding the Ligurians with the acidulated syrup, as recommended in the April Journal. I notice they have sealed some of it over already. One of the Ligurian nuclei I made worked away very well, but could not be induced to raise a queen for themselves out of the ordinary eggs. I gave them at different times four frames of eggs in all stages, each time removing the centre frame and putting the others in their place. At last I gave them a queen-cell, which they soon got a queen from. Some of my black queens are still laying. Does it not seem strange that the Ligurian queens should have stopped so early?

I find I shall have to feed most of my bees to make them strong enough for spring. We have had about six weeks of dry weather; the bees are busy, but the colonies do not seem to be getting any stronger. There is no doubt about the Ligurians being much better as honey gatherers than our old friends the blacks. In feeding them I put the food in a feeder over the entrance at night, and in the morning it is all cleaned out.

Since writing the foregoing I have gone over my stock of bees and cleaned out the hives, spraying a good deal of the acid solution over the combs and into the cells. I find they have begun to eat some of their stores. You must not think because I have not written of late that I have forgotten you. I look out anxiously for the Journal every month, and am sorry there are not more subscribers in this neighbourhood. My reason for not communicating to the Journal more often is because I am not so far advanced in bee culture as some of your friends up north; nor have I the opportunity of seeing any of the new appliances that are constantly coming out, but I do all I can to help any of the bee-keepers in this district, and try to get them to use the new appliances.

Thanking you for your kindness,—I am, yours truly,

J. Barkley.

Westport Apiary, April 29th, 1884.

[Queens always appear smaller at the end of the breeding season; this is easily accounted for by the non-development of eggs in their ovaries. Italian queens generally cease laying earlier in the autumn than black queens; this is characteristic of them. You should always raise your queen-cells in full colonies. We have often found that very small colonies refuse to raise them. We are glad to hear that you have had proof of the superiority of Italians as honey-gatherers. Many thanks for your good wishes. We shall be glad to have a report of bee-keeping in your district as often as convenient. It is only by each contributing their mite that we can learn the progress of our industry, and so profit by the knowledge.—Ed.]

FROM KARL BROS. APIARY.

Sir,—I herewith send our report for the season of 1883-84. We started in the Spring with 120 colonies, but as the weather at that time continued so wet and cold it kept back breeding, so that when the honey season (which only lasted about a fortnight with us) set in, a number of our colonies were not strong enough to receive the second story; as we always look to have 9 or 10 frames of brood in the lower hive before putting on surplus boxes. We then took frames of broods from 55 hives to strengthen the remainder, leaving only one or two combs of bees, brood, and the queens in the hives, filling up with frames with starters only, leaving the bees to build their own comb. As the brood increased we occasionally took out a frame to make artificial swarms with, so that the 55 hives were kept entirely for increase, and the 65 were run for honey. From these we took 4,200lbs., mostly extracted, some flax honey we had to strain; we have also stored away 1,500lbs. in the combs for spring feeding. We sold most of our honey in bulk at 4½d per lb., and small parcels at 6d. Our colonies now number 148 generally in good condition for winter.—Yours, &c.,

Karl Bros.

Ohaupo, May, 1884.

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FROM OUR CONTEMPORARIES

CARNIOLANS.

(Written for the Michigan Bee-keepers' Association)

Before plunging directly into the prominent characteristics of this new race of bees, permit me to dwell for a few minutes on the distinctness with which the characteristics of the several races show forth, and endeavour to draw some well marked, and distinct line, between the race under consideration, and those with whom we are all more or less familiar.

We must, however, in a discussion bearing upon the characteristics of a bee race, take some well-known one, whose good characteristics are plainly visible and accept it as the standard from which we must judge the good and bad points of the others.

In forming this judgment, however, we must not be biased by the idea that our standard is entirely perfect, for each race of bees possesses some desirable characteristic not found, to the same extent in any other race.

Considering these facts, I will take the well-known race, Italians, as the standard, and judge the Carniolans by them.

You know well enough what an improvement the Italians are over the blacks. The difference here is plainly marked. The blacks are small in body, have no golden bands, have not the snap, do not get up so early, or go to bed so late, do not defend their hives against the inroads of the spider and the moth, nor stick to the combs, &c., &c. These differences in character and form are almost as marked as between the white man and the negro.

But when we compare the Cyprians and Holy Lands with the Italians, we find very little difference in color or shape, but, on the other hand, quite a large one when we consider the gentleness of the two races, and the prolificness of the queens.

You all know well, dear brethren, that we are in search of the "coming bee." I do not claim that honour for the Carniolans. No. I declare that throughout my experience, both the Cyprians and the Holy Lands, have proved themselve the coming bee, so far as I was concerned; particularly when I attempted to manipulate them—they too were always the coming ones—and I was gene ally going.

The Cyprians and Holy Lands may have longer tongues than the Italians, but as I have said in a former paper, "save me from a bee with a big probosis at one end and a bigger one behind, for they seem to develop both ends at once."

As before stated, the difference between the Italians, Cyprians, and Holy Lands, is not as well defined as in the case of the Italians, blacks, and browns.

But when we come to the Carniolans we see much difference in form, colour, and characteristics, as compared with any of the other races.

Of course, my observations have not been so extended with the Carniolans as with the Italians,—but sufficient to give you, I hope, some ideas as to what they are.

Having given a general glance over the several races, let us centre down on the Carniolan and look at him individually.

We will first take up the outward appearance. It is a trifle longer in body than the Italians, and quite a little plumper—in other words—a larger bee.

Instead of the golden rings, the whole body is of a deep, dark brown, which, however, is relieved by the many lemon-coloured hairs situated on the back and the distinctness with which each ring of the abdomen is marked by a heavy row of the same, along its edge. These hairs are longer than on the Italian and are much brighter, and give the whole bee a greyish appearance, so marked, that in a hive full of Italians, hybrids and blacks, Carniolans can be pointed out as easily as pure Italians.

The queen looks like a grey, dark Italian, that is to say, she is of a lighter brown than her bees, especially on the first three rings of her abdomen. This may indicate, that way back, some remote period, Carniolans may have sprung from the Italians. We must not look upon the difference in colour between the queen and her workers as strange, for we must consider the fact that there is a greater difference in the case of the Italians themselves.

The queens do not appear quite so pointed in body as the Italians, but broader across the hips, if I may be allowed the expression. However, we shall probably find just as much difference in queens, as to size and colour among the Carniolans as among the other races.

I do not believe this will extend to such a degree that we shall ever find Carniolan queens with yellow bands, producing grey bees having no bands of colour.

We now come to the all important point—their honey-gathering qualities. On this I can vouch that they are in all things equal to the Italians. They get up as early, go to bed as late, and work just as hard at noon day. Whether they will prove as good, or better than the Italians, when it comes to box honey, I am at present unable to state.

They stick to the combs when withdrawn from the hive just as well as the Italians and are more quiet, I think, never running over them. They are also more easily shaken off the frames, which is a great thing when we are working for extracted honey. Their flight is also more direct, they never daudle in front of the entrance as do the Italians sometimes, but enter and leave in direct flight.

As to prolificness, I can vouch again that they are not only equal, but superior to the Italians in this respect. By confining the queen to a few frames by perforated division-boards, we can utilize this prolificness to good advantage.

The best brood chambers to be found on our roof this summer were those of the Carniolan queens. They lay regularly, and shape their brood chamber to suit the frame, as do the other races.

When very young, Carniolans have a silvery appearance, owing to the hairs on the body, which at that time are of a shiny white.

If we can call Italians "nuggets of gold," we can with equal propriety speak of the Carniolans as "Drops of Silver."—John Aspinwall.

We would remind all those wishing to enroll themselves as members of the proposed New Zealand Bee-keepers' Association, to send in their names and subscriptions at once to the acting.secretary, Mr H. H. Hayr, High-street, Auckland.

We would advise all new subscribers to obtain the back numbers of the Journal while they are in print. They will be found invaluable for reference.

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ADULTERATION OF SWEETS BY GLUCOSE.

THE following communication from the able pen of L. L. Langstroth on this subject will be read with more than ordinary interest :

My friend, Mr D. A. McCord, wishing to test the value of grape sugar, as a bee feed, wrote to a glucose manufactory asking their prices. This reply came :

———Feb. 21, 1883.

DEAR SIR,—Yours of the 13th to hand. We will quote you glucose at 4½ cts. per 100 lbs.—in 100 pound kegs. You will find it fine food for producing honey, as pure honey analyzes 76 per cent. pure glucose.—Yours truly,

THE GRAPE SUGAR CO.

Mr McCord wrote again, stating that he wanted grape sugar for a spring bee feed, and not glucose, and received the following :

———Feb. 26, 1883.

DEAR SIR,—Yours of the 24th received, and and shall have attention. We think if you will try it, you will find that you can produce honey very fast, and of fine quality. They feed it very largely in California, and make money out of it. Would like to hear from you after you try it.—Yours respectfully, THE GRAPE SUGAR CO.

Following this letter came glucose instead of the grape sugar ordered. It was about as thick as good honey, and almost as clear as water. As the bees stuck fast to it and died, no use was made of it as a bee feed. Its taste was sweetish and decidedly bitter. No name was given in the above letters but that of the Company, called after the place where their establishment is located.

Prof. Marsh, of the Miami University Training School, furnishes the following analysis of that glucose :

OXFORD, O., July 5, 1883.

DEAR SIR,—I have tested the sample of glucose syrup which you handed me for analysis, and find that it contains large quantities of sulphuric acid and sulphate of lime. The sample of pure honey was found to have a slightly acid reaction.—Very respectfully, E. F. MARSH.

Lime and free sulphuric acid! no wonder it has a bitterish taste. In order to "see what would come of it," Mrs McCord used it in the baking of some gingerbread. The product was poor stuff indeed—not having the sweetness of ordinary corn bread. It *puffed up* remarkably—a thing easily accounted for when the analysis showed how rich the glucose was in sulphuric acid. Syrups, etc., increased in volume by glucose mixtures, are no more to be commended than this expanded gingerbread.

"Pure honey analyzes 76 per cent. pure glucose." It has never yet been made to appear that glucose as pure as that contained in honey or fruits can be *cheaply* produced If the time shall ever come when it can be, it would still be a fraud to use what has so low a sweetening power (only about one-third that of cane sugar), for adulterating molasses, maple syrup, sugars, candies, etc.

A friend of mine was told by the captain of a boat on which he was travelling, that he carried many barrels South to be used in adulterating their sweets.

Another friend informs me that he saw 40 barrels of glucose at one railroad station, all of which was to be used in adulterating maple syrup.

Mr Chas. F. Muth, of Cincinnati, O., perhaps the largest dealer in honey in the West, and who has done so much, both by precept and example, to discourage the sale of adulterated honey, has had glucose recommended to him by large dealers in it. as a good thing to mix with honey, so as to "make money out of it." But one time he said to me, that in his opinion, most of the so-called maple syrup in the Cincinnati market was largely glucose.

L. L. LANGSTROTH,

July 3, 1883. Oxford, O.

The "original" letters sent to us by Mr Langstroth have been scrutinized and returned to him. They are correctly printed at the beginning of the above article. Just think of the villainy of the assertion that "they feed it largely in California," to deceive bee men in Ohio, and get them to engage in the nefarious business of adulteration.

No matter if the large trade in California honey is ruined by this false report, long as "they (the glucose manufacturers) make money at it.

It is high time that stringent laws were enacted and rigidly enforced against this hydra-headed monster adulterator.—*American Bee Journal.*

HOME MARKET FOR HONEY.

THERE are some who have no trouble in disposing of all the honey they can produce; but many cannot sell their honey, especially extracted. When I produced only from 700 to 1000 lbs of honey, I could scarcely find enough customers to consume it; but now, with but little exertion, I can dispose of all the honey I can produce, which was 8,000 lbs in 1882, and 21,000 lbs in 1883. This was nearly all extracted honey, and nearly all taken at my door by customers, who came with crocks, pails, jugs, and large milk cans in which to carry it away. They come every season in the same way, for I have never sold them honey that will get thin and sour, if not kept in damp cellars; nor have I ever sold them honey that was extracted and ripened after extracting (as some tell about). I never allow a pound to be taken away that is not first-class in every respect. We are careful not to put a pound of comb-honey on the market unless it is perfect, so far as ripeness and being sealed up is concerned; we will not offer honey with the top-half of comb sealed and the rest unsealed; it shows for itself, deception cannot be practiced with comb-honey. When a comb is extracted, like the section I have described, it is trying to deceive the customer who buys such honey, and I admit he is deceived, but in most cases not more than once or twice, for a large majority of customers will say: "It makes my throat smart. I do not like it, and will not buy any more." Some will say it is adulterated. Now, such work as this is uncalled for, and I believe anyone can build up an immense home trade for extracted honey. All that is required is to have as good an article *out* of the comb as is sold *in* the comb. My price for extracted has always been 9 lbs for a dollar, or 10 cts. a lb, for 50 lbs or more. —D. White, in *American Bee Journal*, March 5th, 1884.

SWITZERLAND.

A NEW METHOD OF CURING FOUL BROOD.—So far I had managed to stear clear of foul brood, but at last I brought it into my apiary by the purchase of a stock near Versiox. I was unable to bring away with me the one I had selected in particular, and the man sent me the wrong one. I may mention, by way of explanation, that this hive was not one of the movable frame principle, and it afforded, consequently, no facilities for examination. However, the stock declined very rapidly, and in the end

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it was robbed by the others. But when I at last discovered the disease, three out of the eleven stocks of which my apiary consisted had already perished. I then took away from all the others which showed signs of infection, two or three of the worst combs, and then poured repeatedly into the corners of the hives where there were no bees a few drops of pure essence of *Eucalyptus Globulus*, which I receive direct from Grasse, Alpes Maritimes, France. I may say, in passing, that previous to my making the experiment I had made great use of this essence for curing inflamation of the gums and for other operations of a surgical nature. Old combs were all carefully cleaned and dipped into water mixed or perfumed with this essence before being again used. The result was that all my hives revived, and in the course of this year no signs of foul brood have manifested themselves in my apiary.

Acting upon the principle that prevention is better than cure, last autumn I perfumed with the same essence all the syrup I supplied to my bees, and it is to this precaution that I attribute the increased energy and vitality which have distinguished my bees until the end of the season. The perfume thus imparted to the syrup is a most agreeable one. As you probably know, this essence is anti-febrile, anti-scorbutic and anti-inflammatory; it possesses, moreover, the advantage of being neither acid nor poisonous like all the salicylic acids.

I am so pleased with the discovery as an efficient and simple remedy for foul brood that I should like to see it carefully tested by those who have more time than I at their disposal.

The Eucalyptus is used in many surgical operations in place of salicylic acids. I have myself used it for the last six years as a disinfectant for the mouth, in fact it was just in using it in this way that I was led to try it as a remedy against foul brood.—H. Bauverd. (*Translated from the Bulletin d'Apiculture pour la Suisse Romande.*)

QUERIES AND REPLIES.

We shall from time to time give replies through this department to questions pertaining to bee-culture, propounded by our subscribers. We would ask our correspondents to be as concise as possible, and to number their questions 1, 2, 3, and so on.

Query.—*Ligurian Bees.*—The two colonies of bees I received from you have each done very differently to the other, though both are apparently in very good health. One of them has increased to a very strong swarm, and I have taken from them some 20lbs of honey, while the other has not sensibly increased in numbers, and has scarcely made as much honey as will answer for winter stores. The queen of this last is very much smaller than that of the other. I would be glad if you could give me any explanation of this difference through the columns of the Bee Journal.—Yours, &c. H. Roche, Ohineroa.

Reply.—We cannot account for the difference in the working of the two colonies unless on the supposition that the one you find the weakest now threw off one or more swarms. The queen being smaller than the other would appear to point to this as being the case. Probably it was a young queen you saw with but few eggs developed in her ovaries; in this case she would be small as compared with an older and more matured one.

Query.—*Wired Frames—Extracting—Comb Lever.*—Sir,—I notice in a late number of your Journal a quotation from the *American Agriculturist* advising the use of wired frames. This is, I imagine, to strengthen the combs for extracting, and I should be glad if you could give directions for wiring frames, together with the size of wire used, as I suppose it is not the ordinary transferring wire?

I find that my extractor (single comb) will not extract the honey from worker comb without breaking them, though it clears what little drone comb there is easily enough without injury. My combs are, of course, new. I have adopted your correspondent F.D.N.'s plan of scraping, which is a messy process, involving straining with all its objections, but far better than crushing up the combs. Would heat enough to make the honey more liquid not make the combs still more fragile? My honey is exceedingly thick, being principally obtained from gums and wattles, though there is plenty of white clover, dandelions, and cabbage palm, with manuka, a litttle flax, and much gorse.

I have increased this year from 7 to 28, but owing to the bad season have not taken much comb-honey from the top boxes, but the lower ones are full, and have been deprived of several combs, which the bees filled again. How do you fix the whole sheets of foundation in the section boxes? There is no grove in them as there is in the English boxes, and the comb-lever will not work on the whole, nor, so far as I am concerned with the starters either. I have, therefore, adopted the plan of softening the edge of the sheets by touching them lightly on a hot plate, and then pressing them into the sections, but many fall down.—Yours, &c,.

Thomas Awdry, Tadcroft, Rangatikei.

Reply.—An article on wired frames and foundation will be found in another column. There will always be more or less difficulty in extracting honey gathered from our native flora while combs containing it are new. We would advise you to remove the tougher combs from the lower hives as they are emptied during the winter, and substitute others, using those you remove for extracting purposes. If the weather is cool it would be advisable to warm the combs before putting them in the extractor—the temperature of the extracting house should be about 90 deg. when extracting thick honey. We fasten all our comb foundation in the section boxes with the lever. No groove is required with the lever, it is one of the most simple and useful appliances we have. Fasten your lever firmly to a bench, place the section box against the stop and push the lever forward, lay the edge of the foundation on the bottom of the section so that about an eighth of an inch of it will be under the lever; now lift the handle so that the lower end presses on the comb, and draw the lever back with a sliding movement first bending the comb up against end of lever that it may hang perpendicular when in position. A little honey should be put on the end of the lever to prevent it sticking, and the comb should not be brittle.

Query—*Spraying Combs—Feeding with Salicylic Acid Solution and Syrup—Dead Brood—Apiary Assistant.*

No. 1.—Is there any danger of spraying too much salicylic acid solution over the combs?

2. If I have to feed my bees, would it be enough to give them the food as recommended in April number of Bee Journal without spraying the combs previously?

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3. In a healthy colony is there usually any dead brood in the combs, say, for example, five or six in each of the combs?

4. What method do you adopt to keep queens laying late in the season?

5. Is there any lad or man in your neighbourhood you could recommend to take charge of a large apiary?

Westport. J. BARKLEY.

REPLY.—1st. We think not, but there is no necessity to do more than send a fine spray into all the cells and round the edges of the combs and frames. 2nd. If there are any signs of foul brood about we would recommend you to spray the combs, as it is not likely that the acidulated food would be deposited in all the cells. 3rd. No, not usually; we should be very suspicious of dead brood; there may not be anything very serious in it, but we would take the precaution to spray the combs. 4th. By covering the bees up snug and seeing that there is plenty of food in the hive. The late severe frosts effectually put a stop to all breeding with us. 5th. None that we know of. Previous to receipt of your queries we had prepared an article for this number on "Apiary assistants," which please see.

CIRCULARS RECEIVED.

FROM Messrs Bagnall Bros. & Co., Turua, Thames, their Circular and Price List for 1884-85 of hives, artificial comb-foundation, and general supplies for bee-keepers. It is a very neatly got up, profusely illustrated pamphlet of 24 pages and cover, enumerating all the modern appliances a bee-keeper requires. We notice a considerable reduction on former prices for several of the articles and some very useful hints given on making up hives, &c. It is sent free on application, and will well repay the trouble of sending for it.

From Messrs Shadwell and Robinson, Northcote Apiary, near Auckland, their Leaflet Price List of Apiarian Appliances, including hives, section boxes, flat-bottomed comb-foundation, wooden based ditto, safety smokers, feeders, bee veils, candy, queen cages, &c., &c. Their prices for the above are very reasonable, and can be ascertained by sending for their price list—free on application. Messrs Shadwell and Robinson's advertisement appears in another column.

NOTICE TO CORRESPONDENTS.

COMMUNICATIONS from Messrs J. Newland and T. G. Brickell will appear in our next. We shall be obliged if the latter gentleman will send a description with measurements and method of making the chaff hive of which he has sent us a photo.

BEESWAX.

PARTIES sending us beeswax will oblige by putting their name on the packages, as omitting to do so is apt to cause confusion and delay in forwarding cash. Amongst the number of parcels we receive at one shipment here it is difficult to say where each has come from unless there is some distinguishing mark on them.

HONEY PLANT SEEDS.

WE have a limited quantity of the following Seeds FOR SALE, at One Shilling per packet, post free—Spider plant *(cleome pungens)*, Figwort *(scrofularia nodosa)*, Giant Mignonette *(reseda gigantea)*, Catnip *(nepeta cataria)*.

The above seeds are of this year's growth, and our own saving. A packet of each of the four kinds will be sent to any address in the Australian Colonies on receipt of 3s 6d.

I. HOPKINS,
Matamata Apiary.

METEOROLOGICAL OBSERVATIONS FOR THE MONTH ENDING APRIL, 1884.

(SUPPLIED BY T. F. CHEESEMAN, ESQ., AUCKLAND.)
AUCKLAND.

Month.	Barom. corrected (inches.)	Max. Temp. in Shade.	Min. Temp in Shade.	Mean Temperature.	Solar Radiation.	Minimum Temp. Exposed.	Rainfall in Inches.
APRIL	30·40	65·4	53·1	59·3	124·1	45·5	1.21
	30·06			62·1			3·77

Remarks.—From 1st to 4th fine, clear, calm weather, with light N.E. airs; from 5th to 9th, unsettled and showery, strong breeze from N.E. on 8th and 9th; from 10th to end of month, remarkably fine settled weather, with light variable winds. Barometric pressure unusually high throughout month; mean temperature under the average; rainfall very small, not one-third of the average for the previous seventeen years.

HONEY MARKETS.

AUCKLAND, June 1st, 1884.

HONEY.—The demand for first-class honey remains about the same as last month. Sales effected as follows:—Comb in 1lb sections, wholesale, 9d to 10d; retail, 1s. Extracted, in 1lb tins, wholesale, 7½ to 8d; retail, 11d to 1s; glassed, in 2lb jars, 8d per lb; retail, 1s; 60lb tins, wholesale, 6d.

BEESWAX.—Scarce; buyers for clean yellow, 1s per lb; dark, 10d to 11d. H. H. HAYR, High-street.

The demand for good honey remains about the same as last month. The prices are as follows: Wholesale, 1lb tins, 7s 6d to 8s per dozen; retail, 1lb tins, 11s to 12s per dozen.

AUCKLAND AGRICULTURAL AND MERCANTILE Co., Limited.

ENGLAND.

No quotations for March in *British Bee Journal*. The value of honey imported into the United Kingdom during the month of January, 1884, amounted to £2034. Total value of imported honey for the twelve months ending December, 1883, £33,778.—*British Bee Journal*, March, 1884.

AMERICA.

NEW YORK, April 7th, 1884.

HONEY.—White clover and basswood, in 1lb and 2lb sections 17@18c.; dark and second quality, 15c.; extracted white clover in kegs and barrels, 9@10c.

BEESWAX.—30@37c.

H. K. & F. B. THURBER & Co.

SAN FRANCISCO.

HONEY.—There is not enough doing to enable us to give much more than nominal quotations. The demand is very light, and present stocks are of small proportions. Holders are anxious to close out all offerings before the new crop begins to arrive. White to extra white comb, 15@18c.; dark to good, 10@13c.; extracted, choice, 7@8c; dark and candied, 5c.

BEESWAX.—Wholesale, 27½@30c

STEARNS & SMITH, 423, Front-street.

—*American Bee Journal*.

SPECIAL NOTICES.

QUERY AND REPLY DEPARTMENT.—Correspondence for this department should reach the editor not later than the 15th of each month, when replies are required in the next issue.

Correspondence for publication may be sent at book post rates *i.e.*, one penny for every two ounces, providing the book post regulations are complied with, and the words "Press Manuscript" are written on outside of cover.

P.O. Orders for Subscriptions, Advertisements, &c., to be made payable to J. C. Firth, Chief P.O., Auckland, and sent under cover to H. H. Hayr, High-street, Auckland, or P.O. Box 186.

ADVERTISING DEPARTMENT.—Advertisements for the next issue should reach the publisher by the 24th of each month.

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